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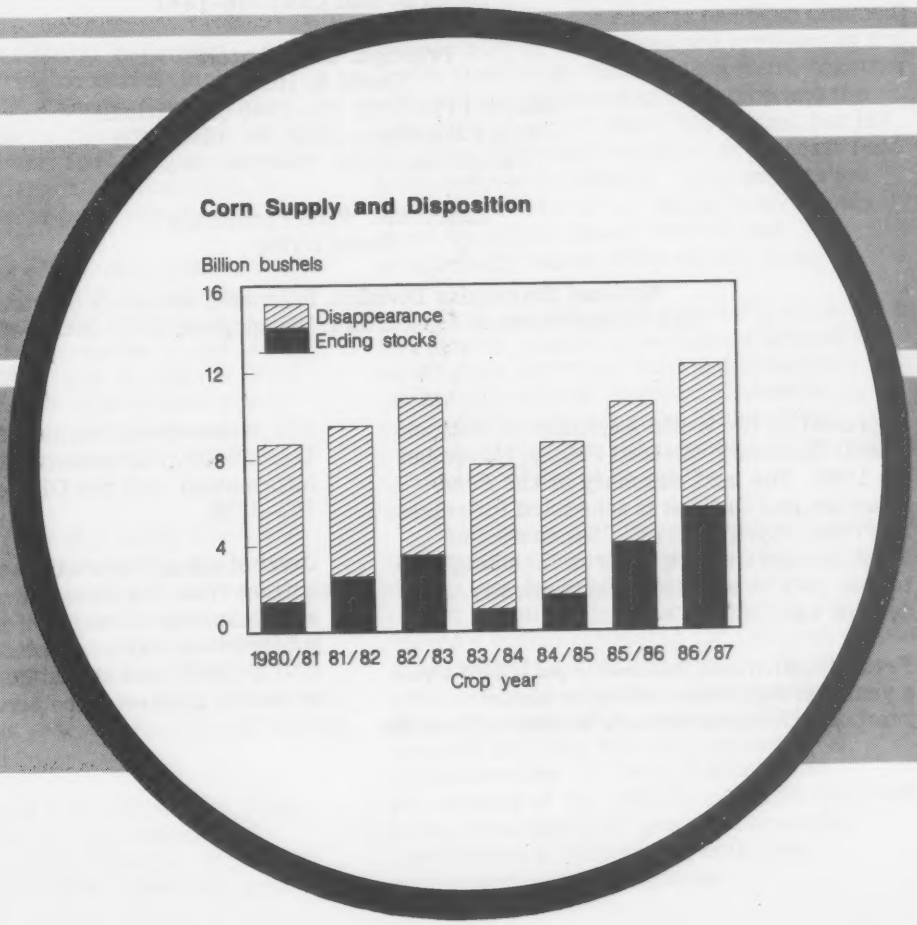

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SUMMARY

Record carryin, large crops, static demand, and low prices characterize the current feed grain situation. Although 9 percent below last year's record, the 1986 U.S. feed grain crop is still large, at 250 million metric tons, despite heavy participation in the feed grain acreage reduction program. The average yield per acre of 2.47 tons marginally exceeds last year's record 2.45 tons. Grain sorghum and barley yields are near year–earlier levels, although oat yields are down 4 percent. Corn yields are expected to average 119.3 bushels per acre, exceeding the 1985 record.

Global feed grain production in 1986/87, at more than 830 million tons, is forecast to be second only to 1985/86, when domestic production was almost 25 million tons larger. Offsetting the U.S. decline somewhat, foreign production will likely grow by about 6 million tons.

Production for 1986/87 in foreign coarse–grain exporting countries (including Argentina, Australia, Canada, South Africa, and Thailand) is only marginally larger, at 66 million tons. However, feed–quality wheat, particularly from Canada and Australia, is competing with coarse grain exports this year.

Increased sales of Chinese grain to South Korea, Japan, and the USSR have intensified competition in world grain markets in 1986/87. World trade in coarse grains is forecast at 85 million tons, up slightly from 1985/86 but well below other recent years. U.S. coarse grain exports are forecast at 40 million tons, also below recent years except for 1985/86.

For the first time in 6 years, the Soviet Union has published grain data by grain type. This development, along with pronouncements from high–ranking Politburo members, indicates that Soviet production in 1986/87 is better than anticipated. USDA raised its forecast of the Soviet crop to 195 million tons, above the previous year and the second largest this decade.

With the record U.S. carryin and large corn crop, the 1986/87 corn supply is estimated at 12.3 billion bushels, 14 percent above the 1982/83 record. However, growth in disappearance will not keep pace with the increase in supply. Feed disappearance is expected to be 4.2 billion bushels, compared with 4.1 billion last year. The increase will come from declines in feed use of other feed grains and does not represent stronger demand.

Changes in animal–unit feed demand indicators are, on balance, negative for 1986/87, despite the precipitous drop in feed grain prices. Dairy cattle, beef cattle, and hog inventories continue to decline. In addition, hog producers have expressed intentions to substantially reduce the number of sows farrowing in the coming year. Even if favorable hog–corn price ratios encourage hog producers to expand, tight credit conditions may make expansion difficult. In any case, lags in the hog production cycle would delay feed demand response until the latter half of 1987.

The outlook for exports has been dimmed considerably by recent upward revisions in the Soviet grain crop. This development, together with a larger Venezuelan corn crop and the slow pace of export sales this season, has led to recent downward revisions in forecast feed grain exports in 1986/87. Corn exports are now expected to be 1.3 billion bushels, only about 60 million above 1985/86 and substantially below other recent years.

Food and industrial demand is expected to increase by roughly 2 percent as demand for sweeteners and other food and industrial products continues to grow. Growth in corn use for ethanol production is uncertain because of low petroleum prices and perceived quality problems with gasohol.

With large supplies and moderate demand, the corn carryout continues to climb. Current projections place the 1986/87 carryout at a record 5.6 billion bushels, surpassing the record 4 billion estimated for this past August 31. However, not all the supply will be available to the market. Placements of new–crop corn under price support loan reached just over 800 million bushels by mid–November, 70 percent above loan placements of the 1985 crop by this time last year. Availability of generic commodity certificates is stimulating both loan placements and redemptions.

Since the start of the 1986/87 marketing year, farm prices have been about 35 percent below the previous year. The October price of $1.31 per bushel was the lowest since November 1972. Thus, even with a loan rate of $1.92 per bushel ($1.84 to farmers after Gramm–Rudman–Hollings reductions), the average farm price of corn will likely be $1.35 to $1.65 per bushel in 1986/87.

Signup for the 1987 feed grains program began November 17 and will end March 30. In 1987, a 20–percent acreage limitation is in effect, and producers may idle an additional 15 percent of their feed grain base acreage in a paid diversion program. The announced diversion payment rate for corn is $2.00 per bushel. Target prices were frozen at the 1986 level, and loan rates were reduced the maximum, for example, $1.82 for corn.

Program participants may request 40 percent of their estimated deficiency payments and 50 percent of their estimated diversion payments in advance at signup. Fifty percent of the advance deficiency and diversion payments will be paid in cash, and the balance will be made in generic commodity certificates.

FEED GRAIN SUPPLY AND USE

Record carryin, large crops, static demand, and low prices characterize the current feed grain situation. Although 9 percent below last year's record crop, the 1986 feed grain crop is still large at 250 million metric tons, despite heavy participation in the feed grain acreage reduction program. The average yield per acre of 2.47 tons marginally exceeds last year's record 2.45 tons. Grain sorghum and barley yields are near year–earlier levels, although oat yields are down 4 percent. Corn yields are expected to average 119.3 bushels per acre, exceeding the 1985 record.

Supplies of feed grains are 14 percent above 1985/86 because of the large harvest and record carryin. Carryin stocks were 126.3 million tons, compared with about 58 million for the 1985/86 marketing year. Total supply for the current marketing year is now estimated at 377 million tons.

Feed grain disappearance is forecast at 209 million tons, up 3 million from last year. Domestic use is expected to decline marginally, although exports are expected to increase by 3.7 million tons over last marketing year.

Food, seed, and industrial use of feed grains continues to increase about 2 percent per year, as demand for high fructose corn syrup (HFCS) and ethanol continues to rise. Ethanol demand may be starting to stagnate because of lower petroleum prices and perceived quality problems with gasohol.

Global feed grain production in 1986/87 is forecast to be the second largest ever, despite a decline in U.S. production. At over 830 million tons, the global crop is only 17 million below the 1985/86 record, when domestic outturn was almost 25 million tons larger. Official Soviet data recently published indicate that Soviet production in 1986/87 is higher than previously thought. The Soviet grain crop is now estimated to be 195 million tons, 3 million more than the previous year, and the second largest this decade. Thus, somewhat offsetting the decline in the United States, foreign production will likely grow by over 6 million tons.

With larger foreign production, world coarse grain trade is likely to increase only 1 million tons, despite the dramatic decline in prices. U.S. feed grain exports are projected to be 40 million tons in 1986/87--above 1985/86 but greatly below other recent years.

Changes in animal–unit feed demand indicators are, on balance, negative for 1986/87, despite the precipitous drop in feed

grain prices. Dairy cattle, beef cattle, and hog inventories continue to decline. Poultry production continues to rise at a projected 6 percent per year, although increases probably won't offset declines in red meat and dairy feed demand.

Feed grain carryout is forecast at 168 million metric tons for the 1986/87 marketing year, 33 percent above last year's record. Free stocks are expected to stay below 1985/86 however, as farmer-owned reserve stocks increase 2.5 times and Government-owned stocks rise 60 percent.

As market prices for feed grains fall well below loan rates, price support loan placements will likely exceed last year's record. Large deficiency and diversion payments, including advances for the 1987 feed grains program, will substantially support incomes for feed grain producers in 1986/87.

1987 Feed Grains Program Announced

Signup for the 1987 feed grains program began November 17 and will end March 30. Producers who want to be eligible for Government loans and income support payments will be required to idle 20 percent of their acreage base. Producers may idle an additional 15 percent of their feed grain base acreage in a paid diversion program in 1987. Diversion payments will be determined by multiplying the participant's program yield times the acreage diverted times the diversion payment rates. The announced per-bushel payment rates are: corn, $2.00; sorghum, $1.90; barley, $1.60; and oats, $0.80.

The 1987 per-bushel established target prices for feed grains will be the same as for the 1986 crops--$3.03 for corn, $2.88 for sorghum, $2.60 for barley, and $1.60 for oats. Loan rates for the 1987 feed grain crops are $1.82 for corn, $1.74 for sorghum, $1.49 for barley, $0.94 for oats, and $1.55 for rye.

Feed grain program participants may request 40 percent of their estimated deficiency payments and 50 percent of their estimated diversion payments in advance at signup. Fifty percent of the advance deficiency and diversion payments will be paid in cash and the balance will be made in generic commodity certificates. Estimated deficiency payment rates per bushel are $1.21 for corn, $1.14 for sorghum, $1.11 for barley, and $0.55 for oats.

The Role of Certificates

Generic commodity certificates have played an important role in grain markets since last summer. Partial payments of 1986 feed grain and wheat program advance deficiency and diversion payments were made with certificates worth about $2.32 billion through October 30, 1986. An additional $47 million of generic certificates were issued to U.S. ethanol producers, and $44.6 million to domestic grain exporters through October. Certificate issuances as of October 30 total an estimated $2.41 billion.

The recently announced advance payments to 1987 program participants are likely to add significantly to this supply. The certificate portion of advance 1987 deficiency payments to corn growers alone could exceed $1 billion if 1987 signup is as high as 1986, and all participants request the advance. In addition, Conservation Acreage Reserve payments of roughly $100 million were paid in certificates this marketing year. Other payments, such as 5-month and final 1986 deficiency payments, could be made with certificates as well.

Reported redemptions of Government-obligated grain and soybeans through November 12 amounted to $1,444 million in certificates. Most exchanges have been used to cancel producer loans, rather than purchasing Government-owned commodities (rice is a notable exception with 99 percent of exchanges for Government stocks). A total of 489 million bushels of corn had been exchanged for certificates through November 12, with 87 percent coming from producer loans, although 44 million bushels of grain sorghum had been exchanged for certificates with about 50 percent from producer loans.

Corn has been the most popular commodity for certificate redemptions, accounting for $819 million, or 57 percent of the total value of redemptions so far. As only about 50 percent of certificates were issued to corn producers, some transfer of certificates is indicated by the higher share of redemptions. Participants have used the

Generic certificate exchanges through November 12, 1986

Exchange source	CORN		SORGHUM		BARLEY		OATS	
	Bushels (mil)	Value (mil $)	Bushels (mil)	Value (mil $)	Bushels (mil)	Value (mil $)	Bushels (mil)	Value (mil $)
CCC INVENTORY								
Catalogued	16.44	31.61	6.53	12.79	11.65	13.79	0.10	0.10
Non-catalogued	45.40	71.98	15.18	26.38	10.41	12.39	.20	.19
Total	61.83	103.59	21.71	39.17	22.06	26.18	.30	.29
Producer Loans 1/								
9-month	423.80	709.98	22.15	39.96	35.13	41.70	.90	.87
FOR and SPSLP 2/	3.46	5.79	.48	.86	2.44	2.90	.10	.09
Total	427.26	715.77	22.63	40.82	37.57	44.60	1.00	.96
TOTAL	489.10	819.36	44.34	79.99	59.63	70.78	1.30	1.25
Share of exchanges				Percent				
CCC		12.6		49.0		37.0		23.2
Loans		87.4		51.0		63.0		76.8
Share of total exchanged certificates		56.7		5.5		4.9		0.1

1/ Exchanges processed through date shown, though data may be lagged 2 to 3 weeks. 2/ FOR = Farmer-owned Reserve and SPSLP = Special Producer Storage Loan Program.
Source: Agricultural Stabilization and Conservation Service, USDA.

program to turn certificates into cash by placing newly harvested grain under loan and quickly exchanging the grain with certificates. Lag in reporting certificate transactions may mean that coming months will reveal greatly elevated certificate exchange activity, particularly involving corn.

Rule Change

After October 31, producers who obtained price support loans no longer had the option of substituting their loan collateral from one location to another while using generic commodity certificates to redeem that loan collateral. Some producers had used this option to take advantage of wider differences between loan rates and certificate redemption prices at other locations. This rule change somewhat reduced the attractiveness of placing grain under loan to exchange it with certificates.

Corn

June–August Feed Use and Exports Down

Apparent feed and residual use of corn during June–August 1986 was 506 million bushels, more than 100 million below a year earlier despite lower feed prices and stronger livestock prices. Exports of corn grain and products were 154 million bushels, down 142 million from the corresponding period last year. Food and industrial demand for corn increased about 6 percent from June–August 1985, bringing total disappearance for the summer to 956 million bushels.

Total disappearance for the 1985/86 marketing year was below 6.5 billion bushels,

the lowest since 1977/78. In 1985/86, the record 1985 corn crop and low disappearance left a record carryout of 4 billion bushels. This carryout was .5 billion bushels more than the previous record set in the fall of 1983.

On June 1, free stocks of corn were only 840 million bushels, compared with June–August disappearance of 956 million. Thus, despite the huge carryover on September 1, record placements of corn under Government loans may have led to tightening of free supplies and rising prices if not for the issuance of roughly $2.5 billion in generic commodity certificates.

Record Yields; Near–Record Crop

The 1986 corn yield is forecast at a record 119.3 bushels per acre, up from last year's record 118 bushels. The crop is forecast at 8.2 billion bushels, roughly equal to 1982's crop, despite a 20–percent acreage reduction requirement and record 85–percent program signup by corn producers.

The corn harvest in the 17 most important producing States was 63 percent complete by November 2, compared with 66 percent on average. The harvest in Iowa, Michigan, Missouri, and South Dakota was substantially behind average, although Indiana, Illinois, and Ohio were ahead of average. However, by November 16 the 17–state harvest surged to 86 percent complete, even with the normal harvest completion.

Quality Concerns

The generally warm, wet Midwestern weather this fall has spawned concerns about the quality of the 1986 corn and soybean crops. Instances of field–sprouted and moldy corn have been reported. Field sprouting may occur during periods of heavy rain when ears are still erect. If properly dried and handled, sprouted corn should maintain its feeding value. However, sprouted corn is susceptible to insect, mold, and other damage. Some agronomists have advised against long term storage of sprouted grain.

Moldy grain may contaminate other grain if blended, and livestock may refuse to eat it or develop health problems if toxins have been produced. While the quality problems are not thought to be widespread, some of the 1986 crop appears to be at risk, and feed and residual disappearance may rise due to waste.

Price Support Loan Activity

Placements of new–crop corn under price support loan reached 806 million bushels by mid–November, 70 percent above loan placements of the 1985 crop by this time last year. This accelerated activity may be the result of several factors. First, the 1986 crop was 63 percent harvested by early November, compared with 57 percent of the 1985 crop. Second, program participation was 85 percent in 1986, compared with 69 percent in 1985. Third, farm prices have fallen further below loan rates this year; for October, the difference between the farm price and loan rate was 53 cents in 1986, compared with 44 cents in 1985.

Finally, generic certificates did not exist last fall. The proliferation, popularity, and profitability of generic commodity certificates may be inducing some quick turnaround in loan placements and certificate exchanges. Redemptions of 1986–crop corn, which include certificate exchanges, are greatly ahead of last year: 71 million bushels through November 12, 1986, compared with only 0.3 million through November 13, 1985.

With the high participation in the 1986 feed grain program, about 6 billion bushels may be eligible to be placed under Government loan. Although loan placements

Corn price support loan activity

Loan activity	1986 November 12	1985 November 13
1985 crop		
Put under loan	3,094.6	473.2
Redeemed	525.4	0.3
Acquired by CCC	470.4	---
Reserve	376.4	---
Outstanding	1,722.4	472.9
1986 crop		
Put under loan	806.2	
Redeemed	71.1	
Outstanding	735.1	

will not likely be this large, they probably will exceed last year's 3.1 billion bushels. As in 1985/86, generic certificates will likely ease tightening of the free supply. With the 1987 feed grain program signup that began November 17, producers requesting advanced payments may receive at signup generic commodity certificates for 20 percent of estimated deficiency payments, and 25 percent of estimated diversion payments.

Supply–Demand Imbalance

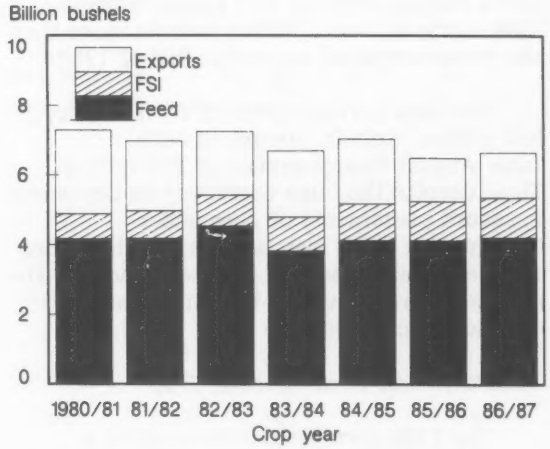
With the record carryin and large corn crop, total supply for 1986/87 is estimated at 12.3 billion bushels, 14 percent above the 1982/83 record. However, growth in disappearance will not keep pace with the increase in supply. Feed disappearance of corn is expected to be 4.2 billion bushels, compared with 4.1 billion last year. The increase will compensate for declines in feed use of other feed grains and does not represent stronger feed demand.

Changes in animal–unit feed demand indicators are, on balance, negative for 1986/87, despite the precipitous drop in feed grain prices. Dairy cattle, beef cattle, and hog inventories continue to decline. In addition, hog producers have expressed intentions to substantially reduce the number of sows farrowing in the coming year. Even if favorable hog–corn price ratios encourage hog producers to expand, tight credit conditions may make expansion difficult. In any case, lags in the hog production cycle would delay feed demand response until the latter half of 1987.

The outlook for exports has been dimmed considerably by recent upward revisions in the Soviet grain crop. This development, along with a larger Venezuelan corn crop and the slow pace of export sales this season, have led to recent downward revisions in forecast feed grain exports in 1986/87. Corn exports are now expected to be 1.3 billion bushels, only about 60 million above 1985/86, and substantially below other recent years.

Food and industrial demand is expected to increase by roughly 2 percent as demand for sweeteners and other food and industrial products continues to grow. Growth in corn use for ethanol production is uncertain as low petroleum prices and perceived quality problems with gasohol may stifle growth in ethanol demand.

Corn Disappearance



With large supplies and moderate demand, the corn carryout continues to climb. Current projections place the 1986/87 carryout at a record 5.6 billion bushels, surpassing the record 4 billion estimated for this past August 31.

Monthly farm prices for corn have declined steadily since last May as the prospects of a greatly lowered price support loan rate, moderate demand, plentiful free supplies, and near–ideal growing conditions for the 1986 crop fueled bearish sentiments. Since the start of the 1986/87 marketing year, farm prices have been about 35 percent below a year earlier. The October price of $1.31 per bushel was the lowest since November 1972. Thus, even with a loan rate of $1.92 per bushel ($1.84 to farmers after Gramm–Rudman–Hollings reductions), the average farm price of corn will likely be $1.35 to $1.65 per bushel in 1986/87.

Sorghum

Grain sorghum supplies are estimated at a record 1,451 million bushels, up 3 percent from 1985/86. The increase is led by the 84–percent rise in beginning stocks.

Production in 1986 is estimated at 900

million bushels, down 19 percent from 1985's record, but up 1 percent from the October 1 forecast. Harvested area is estimated at 13.5 million acres, down 19 percent from 1985. Yields are projected to be level with last year's record at 66.7 bushels per acre.

As of November 2, the sorghum harvest was only 70 percent complete, behind normal by 4 points. Louisiana, Arkansas, and Mississippi harvests were completed by this date. By November 9, the harvest advanced to 78 percent complete, behind normal by 5 points. Although some crop damage from freezing has been reported, sprouting and mold do not appear to be a problem, as with Midwestern corn and soybeans.

Sorghum use is expected to decline 7 percent to 805 million bushels in 1986/87, as feed use retreats from last year's high level, and exports increase 12 percent to 200 million bushels. Since export commitments are lagging last year's pace, sales will have to pick up briskly later this year to meet projections.

With record supplies and lagging demand, carryout stocks are projected to reach 646 million bushels next August 31, the highest since the early 1960's. Free stocks will remain fairly tight, however, as stocks in the farmer-owned reserve triple and Government stocks grow by 20 percent.

While monthly sorghum farm prices are 28 percent below year-earlier levels, they have remained high relative to corn. In October, the sorghum farm price of $1.32 per bushel was well above the traditional 90 to 95 percent price relationship to corn. Gulf port sorghum prices in September were $1.66 per bushel, compared with $1.68 for corn. With sorghum prices high relative to corn, sorghum exports and feeding could be discouraged this marketing year.

Barley

Barley production in 1986 was a record 600 million bushels, up marginally from the last 2 years. Although yield was down 1 bushel to 50 bushels per acre, area harvested was up 3 percent from a year ago, the largest harvested area since 1962.

Adequate moisture was available throughout the growing season, and a good crop was indicated. However, excessive moisture fostered disease development, leading to lower than expected yields. The harvest was hampered by rain and humidity, leading to a slightly delayed finish.

Feed disappearance of barley was record high in 1985/86 at 335 million bushels. For the 1986/87 crop year, barley feed use is expected to stay high, but fall more in line with recent years at 300 million bushels. Use of barley and malt in brewing and distilling has fallen steadily in the 1980's, as beer and distilled beverage product demands have flattened. Thus, other domestic use will remain fairly flat.

In the world market, lower Soviet demand for barley imports is expected to reduce EC coarse grain exports. The EC producers may compensate by increasing shipments to other EC members, such as Spain. U.S. barley exports received an enormous boost by sales through the Export Enhancement Program to Saudi Arabia. Barley export projections have nearly doubled to 100 million bushels, based largely on Saudi purchases.

Monthly barley farm prices have been 20 to 30 percent below year-earlier levels in 1986/87, although by October, the farm price was no longer declining. In cash markets, feed and malting barley prices appear to have bottomed out in August. For 1986/87, the barley farm price is expected to average between $1.40 and $1.60 per bushel.

Oats

The October *Crop Production* report estimated oat production at 384 million bushels. This was down 59 million bushels from the August report and 137 million from last year. This year's lower production was caused by a drop in harvested acreage and a yield reduction of nearly 9 bushels per acre. Minnesota's oat yields fell 23 bushels per acre while South Dakota and Iowa yields were reduced 16 bushels.

Beginning stocks were almost unchanged for the 1986/87 year at 183 million bushels,

compared with 180 million in 1985/86. Imports will remain nearly unchanged at 30 million bushels. However, total supplies will be 26 percent lower due to the smaller crop.

On the demand side, oats used for feed are projected to drop to 400 million bushels, down 61 million. Exports are expected to stay at 2 million, with FSI use slightly increasing to 85 million bushels.

Therefore, 1986/87 ending stocks are projected at 109 million bushels, a 40-percent drop from last year. This would mean a stocks-to-use ratio of .22, which represents the tightest supply situation of record.

Because of the tight supply, the normal oat/corn price ratio has been affected. Typically, oat prices have averaged about 50-55 percent of corn prices. In the current marketing year, oat prices are expected to be 70 to 80 percent of the corn price, at $0.95 to $1.20 per bushel.

Hay

Hay production is forecast at a record high 158 million short tons, 6 percent above 1985. Yield is forecast at a record 2.59 tons per acre. Regional conditions for hay and pasture have reversed since last year. Drought has struck the Southeast, but conditions are greatly improved in the Dakotas, Montana, and Wyoming where roughage supplies were critically short last year. The 1986 hay crop in Alabama, Georgia, and South Carolina is forecast at only 50 to 60 percent of last year's crop, while the Dakotas and Montana may have a crop 1.6-1.9 times last year's.

Roughage consuming animal units (RCAU's) have declined since 1981/82 when there were 91.8 million units. For 1985/86, RCAU's were estimated at 83.3 million, and are expected to decline to 80.2 million in 1986/87 as the Dairy Termination Program and liquidation in the beef and sheep herds continue. The supply of hay per RCAU in 1985/86 was 2.1 tons, and is expected to climb in 1986/87 to 2.3 tons.

Disappearance in 1985/86 about equaled production to leave May 1 carryin at a comfortable 26.8 million tons. With the record hay crop, the total supply will increase to 184.8 million tons. However, disappearance in 1986/87 can only be expected to decline as the roughage-consuming herds are liquidated. Thus, carryout will likely increase to 35 million tons or more.

In response to larger supplies in 1985/86, hay prices fell roughly $4 dollars per ton to $68.50, and disappearance increased. In 1986/87, fewer animal units and an even greater supply in most of the country have led to further price declines. The farm price of hay has been below $60 since July, around 13 percent below a year earlier. Although the winter months may bring some seasonal price rise, hay prices for the year may average $5 to $10 below 1985/86.

FEED DEMAND

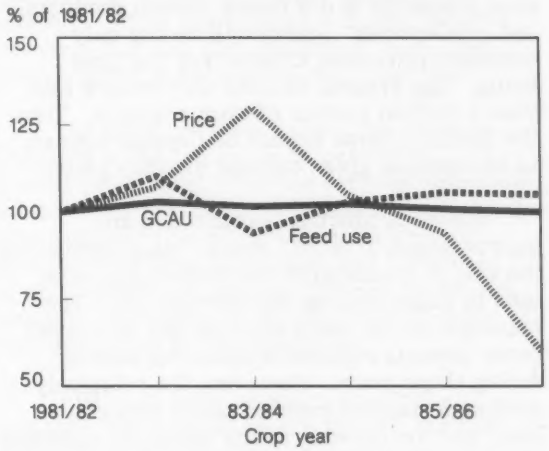
Feed disappearance for the four feed grains is projected to decline marginally to 133.6 million metric tons in 1986/87. Wheat feeding was a surprising 11 million tons in 1985/86, but is expected to decline to 6.1 million in 1986/87.

Demand for feed grain by livestock feeders is related to the price of grain, the prices of competing and complementary feeds, and the prices of animal products. Another factor affecting feed demand is the nutritional requirements of livestock and poultry. This analysis of nutritional needs is behind the development of grain consuming animal units (GCAU's), which places the various species of livestock and poultry on a common base, for the purpose of forming an index of total feed requirements.

Based on price incentives, the quantity of feed grains fed in 1986/87 would be expected to increase sharply. In fact, 1986/87 feed use is expected to be about level with 1985/86. A look at the animal numbers and a closer look at feeding practices explain why.

GCAU's are expected to decline about 0.9 percent in the 1986/87 feed year. Poultry animal units, which include broilers, chickens, turkeys, and the egg and brood flocks, are expected to increase about 5 percent in 1986/87. However, all other major categories of animal units are expected to decline. Dairy cattle are expected to decline 7 percent, due largely to the Dairy Termination Program.

Animal Units, Feed Use, and Prices



Beef and hog animal units are expected to decline 3 to 4 percent.

Halfway through calendar 1986, cattle inventories were reported at their lowest level since estimates were begun in 1973. The upcoming January 1 *Cattle* report is likely to show the smallest inventory since the early 1960's. The hog breeding herd was the lowest since estimates were begun in 1964, with farrowing intentions down substantially for the coming year. In addition, slaughter weights of hogs and cattle were near-record for much of 1985/86, indicating that feeding rates had already been increased.

Although fed cattle marketings will likely remain large in spite of the smaller inventory, fewer nonfed cattle are slaughtered when feedlot demand is strong. Thus, the potential for increased feed use during 1986/87 by dairy, hog, and beef producers is extremely limited.

FOOD, SEED, AND INDUSTRIAL USE OF CORN

The growth in food, seed, and industrial (FSI) use of corn continues to level out after the sharp increases of the late 1970's and early 1980's. Growth of 80 to 100 million bushels, which was typical of past years, has now been slashed to an increase of 20 million bushels for the 1986/87 crop year. A continuation of this trend is likely for the next several years as many of the big-growth FSI markets begin to mature.

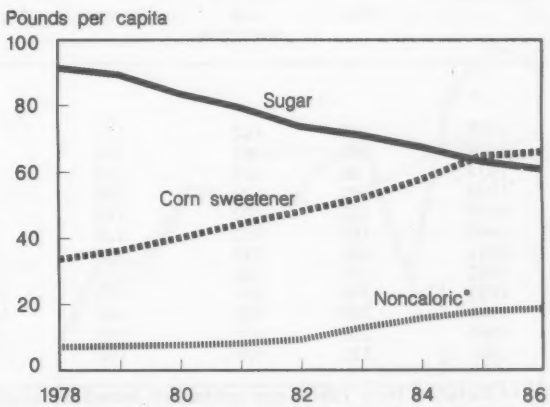
Wet-milled products such as corn sweeteners and starch continue to be a major component of the FSI markets. Per capita use of corn sweeteners (glucose, dextrose, and high fructose corn syrup (HFCS)) in the United States will clearly surpass sugar (sucrose) in 1986.

U.S. per capita consumption of caloric sweeteners has increased only marginally from 126.6 pounds in 1978 to 128.5 pounds in 1986. However, the total consumption of sweeteners, including noncaloric sweeteners, has increased in the past 10 years by over 20 pounds per capita. Thus, reductions in sugar use have been caused by the large growth in the use of corn sweeteners, not higher use of noncaloric sweeteners.

While demand remained strong this past summer for HFCS, production in May, July, and August actually fell behind a year earlier. This marked the first time since the early development of HFCS that monthly production was below the previous year. Cooler weather in late summer reduced demand for soft drinks and thus, HFCS. Also, supplies of glucose and dextrose were tight in late summer, causing some wet-millers to switch from HFCS production to glucose and dextrose. Total use of glucose and dextrose in 1985/86 was unchanged from the previous year, however.

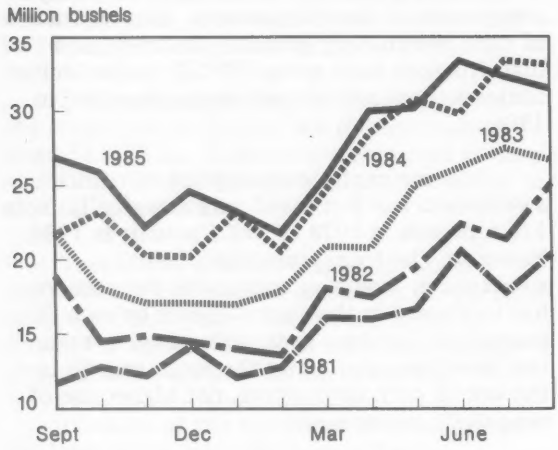
HFCS production appears to be approaching the current plant capacity limits. This fact, along with the saturation of HFCS

U.S. Sweetener Consumption



* Sugar sweetness equivalent. Assumes saccharin is 300 times as sweet as sugar and aspartame is 200 times as sweet.

Corn Use in HFCS Production



markets, means that HFCS production is not expected to match the dynamic growth trends of the past. In response to seasonal capacity constraints, the industry has changed to booking orders quarterly rather than on an annual basis. Thus, HFCS prices have become more variable than in the past.

Crystalline fructose sweeteners continue to be a topic of interest for the future of the corn sweeteners industry. This past June, Staley Continental, Inc., announced development of "Crystar," a crystalline fructose sweetener. Crystar will be blended with sugar in most applications. Production of Crystar is slated to begin in 1987 and will be used primarily in dry mixes, cereal products, and confections. Staley will be the only company producing Crystar for the time being. The present facility will require less than 5 million bushels of corn annually. Thus, the medium-term impact of Crystar appears to be minimal given current industry plans.

Starch production has shown some improvement in recent years. Sixty percent of the starch produced in the United States is used in paper making and corrugators. The recession of the early eighties and increased paper imports reduced demand for starch during those years. However, the relatively weaker dollar has lowered paper imports. This, and the upswing in the domestic economy have contributed to a turnabout in starch production.

Price margins for most corn products have improved in recent months. Manufacturers of corn sweeteners and ethanol products have enjoyed lower corn prices while receiving higher prices for their feed and meal byproducts. The weaker dollar has contributed to the higher gluten feed and meal prices, as exports claim a large share of shipments.

The ethanol situation is still a big question mark. The potential is still there for large scale use of ethanol as an octane

Corn: Food, seed, and industrial use 1/

Year beginning September 1	Wet-milled products				Dry-milled alcohol	Dry-milled and alkaline cooked products	Seed	Total
	HFCS	Glucose and dextrose	Starch	Alcohol				
	Million bushels							
1975	45	162	115	5	20	154	20	521
1976	62	164	116	10	15	155	20	542
1977	80	170	124	10	20	158	20	581
1978	105	170	124	15	20	155	20	608
1979	127	170	120	25	20	158	20	640
1980	165	183	120	35	35	160	20	718
1981	185	183	130	83	35	162	19	797
1982	215	188	127	130	50	170	15	895
1983	256	191	145	150	50	164	19	975
1984	309	188	142	150	86	160	19	1,055
1985	330	190	150	170	110	161	19	1,130
1986 2/	335	195	150	175	115	161	19	1,150

1/ Data in this table are estimates based on production and sales figures obtained from various Government and private industry publications as well as on unpublished information provided by numerous industry sources. 2/ Projected.

booster. However, questions remain concerning perceived quality problems of gasohol. While the ethanol industry remains convinced of the high quality of its product, the ultimate judge will be the consumer.

The other problem facing the ethanol industry is the low price of petroleum. At recent price levels, further refining petroleum oil to boost octane has become a competitive alternative to blending ethanol. Strong competition from petroleum and perceived quality problems make it difficult to project ethanol production to increase much above current levels in the near term.

Although news concerning HFCS and ethanol typically dominate the FSI outlook, dry-milled and alkaline-cooked products may deserve more attention despite their small 15-percent share of FSI use. Corn-based snack products, such as tortilla and corn chips, have increased dramatically since 1980 with sales up 50 percent. However, the use of corn grits by brewers has declined since 1977. The decline in use of brewers' grits has largely offset gains made by other dry-milled products.

Corn use in alcohol production

Marketing year	Wet-milled		Dry-milled		Total
	Fuel	Beverage 1/	Fuel	Beverage	
	Million bushels				
1975	0	5	0	20	25
1976	0	10	0	15	25
1977	0	10	0	20	30
1978	0	15	0	20	35
1979	10	20	0	20	50
1980	20	20	15	20	75
1981	55	30	25	10	120
1982	100	30	40	10	180
1983	120	30	40	10	200
1984	120	30	80	10	240
1985	140	30	100	10	280
1986 2/	145	30	105	10	290

1/ Also includes nonfuel industrial alcohol.
2/ Projected.

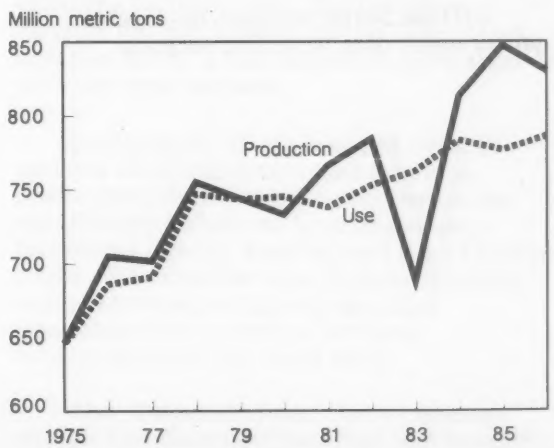
WORLD COARSE GRAIN SITUATION

Global feed grain production in 1986/87 is forecast to be the second largest ever, despite a large decline in U.S. production. At over 830 million metric tons, the global crop is only 17 million tons below the 1985/86 record, when domestic production was almost 25 million tons larger. Somewhat offsetting the forecast decline in the United States, foreign production will likely grow by about 6 million tons.

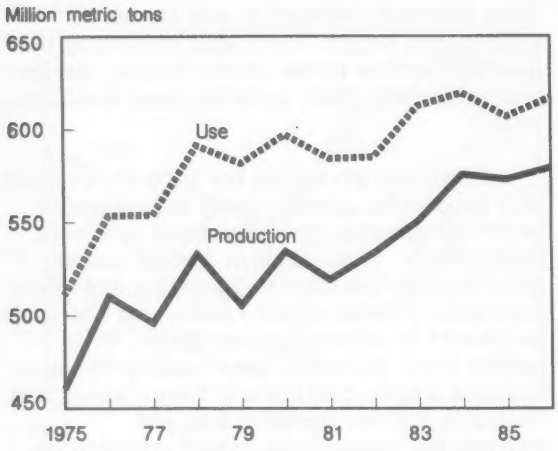
Large carryin stocks for 1986/87, coupled with production gains in some key countries, have continued to force exporters to accept lower prices. Production in foreign coarse grain exporting countries (including Argentina, Australia, Canada, South Africa, and Thailand) in 1986/87 is only marginally larger, at 66 million tons. However, feed-quality wheat is in ample supply, particularly from Canada and Australia, further complicating and intensifying coarse grain export competition this year.

Easing this pressure somewhat, production in the major importer countries (including, but not limited to the European Community, the Soviet Union, Mexico, and Japan) is forecast in 1986/87 to fall slightly, to about 280 million tons. This, coupled with dramatically lower grain prices and the ready availability of feed grains for exports, has led to expectation of a slight increase in global trade. World trade in coarse grains is forecast at 84.8 million tons, up from 83.8 in 1985/86, but well below other recent years. U.S. coarse grain exports are forecast at 40.3 million tons, also below recent years except for 1985/86.

World Coarse Grain Production and Use



Foreign Coarse Grain Production and Use



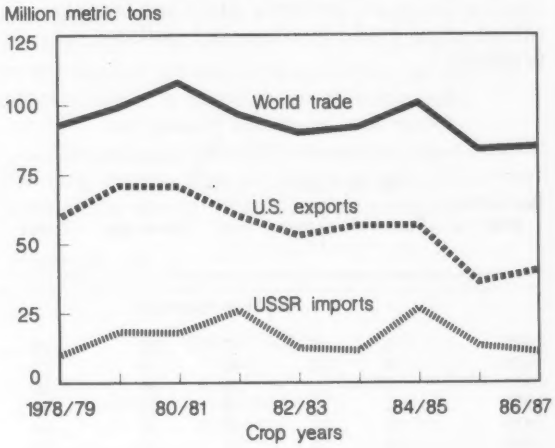
For the first time in 6 years, the Soviet Union has published grain data by grain type. Following record production in 1978 (238 million tons) and a poor crop the next year, the Soviets began a policy of not reporting crop production data. However, in mid-1986 publication of several sources, including the national statistical handbook, marked the beginning of a new policy of openness.

Data reported for 1981 through 1985 indicate production close to USDA estimates. However, the new, slightly lower feed use data indicate some grain stockpiling may have taken place in the first half of the 1980's—thereby at least partially explaining the recent Soviet absence from international grain markets. Recent Soviet purchases have been limited to Canada and the EC-12.

Official Soviet republic-by-republic procurement data were also recently published. These data, along with pronouncements from high-ranking members of the Politburo, indicate that Soviet production in 1986/87 is better than anticipated. The revised USDA forecast of 195 million tons is above the previous year, and the second largest crop this decade.

Competition in world grain markets in 1986/87 has been intensified by increased sales by China to South Korea, Japan, and the USSR. For the year, sales are likely to exceed 6 million tons. As a result, the forecast of U.S. coarse grain exports (largely corn) continues to show modest growth over the previous year. In 1986/87, U.S. corn exports are forecast at 33 million tons, up 1.5 million, while sorghum trade is likely to increase more than 500,000 tons. In total, U.S. sales may increase by about 10 percent.

World Coarse Grain Trade



1986–88 CORN YIELD PROJECTIONS FOR THE 10 MAJOR PRODUCING STATES

by

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Abstract: State–level yield equations for corn grown in the 10 major producing States indicate that change in technology was the major factor influencing productivity gains from 1955 to 1985. July precipitation and July or August temperature caused corn yields to vary significantly. Average annual per–acre yield increases ranged from 1.5 bushels for South Dakota to 2.8 bushels for Nebraska. However, annual yield increases in Illinois, Indiana, Iowa, Nebraska, and Wisconsin were smaller from 1969 to 1985, compared with yield increases prior to 1969. For each State, 1986–88 annual corn yield projections were made using trend estimates, given a range of weather assumptions.

Keywords: Corn, yields, 10 major producing States, technology, weather, trends, projections.

Introduction

Analysis of increasing corn productivity in the 10 major producing States during the past three decades shows that change in technology and weather were the primary determinants significantly influencing per–acre yields. The 10 major producing States include the Corn Belt (Illinois, Indiana, Iowa, Missouri, and Ohio), the Lake States (Michigan, Minnesota, and Wisconsin), and two Northern Plains States (Nebraska and South Dakota). An average 84 percent of the U.S. corn crop was produced annually in this contiguous growing region during 1985 and 1986 (8).1/ From 1955 to 1985, average annual yields in the major producing regions ranged from 47.1 bushels per acre in South Dakota to 94.2 bushels in Illinois.

Productivity analyses recently conducted for corn at the national and regional level indicate results similar to those estimated at the State level. Butell and Naive (1) determined that, from 1954 to 1977, the major factors influencing average per–acre corn yields nationally were fertilizer use, technology, weather, and plantings. Of these, increased fertilizer applications contributed to over one–half of the average annual yield increase, while changes in technology (trend) accounted for most of the remaining explained gains. Butell and Naive pointed out, however, that the fertilizer and trend variables were highly correlated, as per–acre fertilizer applications have risen steadily over time.

Houck and Gallagher (2) found that national average corn yields from 1951 to 1971 were responsive to the price of fertilizer relative to the price of corn, harvested acreage, technology, and weather. Lin and Davenport (3) concluded that increasing corn yields in the Corn Belt and Northern Plains from 1955 to 1981 were attributable to change in technology, increased fertilizer use, planted acreage, and weather. Yield gains in the Lake States were determined by the same factors, excluding fertilizer use. The fertilizer variable was not included in the Lake States equation due to a high degree of correlation with the trend variable.

Sundquist et. al. (4) analyzed 1954–80 national data, and determined that corn productivity during this 27–year period was significantly influenced by nitrogen use, technology (trend), weather, and the 1970 corn blight. All variables were linearly specified except nitrogen, which was specified logarithmically to avoid a collinear relationship with the trend term.

Also, Teigen (5) found that technology change, fertilizer use, plantings, and weather

1/ Numbers in parentheses refer to sources listed in the References section.

significantly influenced U.S. corn yields from 1964 to 1983. While both per-acre applications of phosphorus (negatively) and potash (positively) were found to be statistically significant determinants of corn yields, the impact of nitrogen was found not to be statistically significant. Additionally, an annual yield trend coefficient was not statistically significant when fertilizer was accounted for in the equation.

This article presents the results of updated per-acre corn productivity equations similar to the results cited above, though further disaggregated to the State level. Estimated trend and weather coefficients were used, assuming several weather scenarios, to project 1986-88 corn yields for each of the 10 major producing States.

Yield Estimation Procedure and Data

State-level corn yield response functions for 1955-85 were estimated by ordinary least squares (OLS). For most States, the final OLS functional form to estimate b_0 through b_6 was:

$$Yield_t = b_0 + b_1 Technology_t + b_2 D_t + b_3(Technology_t * D_t) + b_4 Precipitation_t + b_5 Precipitation_t^2 + b_6 Temperature_t + e_t$$

where, $Yield_t$ = annual average per-acre yield in year t

$Technology_t$ = time trend in year t (1955 = 1, ..., 1985 = 31)

D_t = 1 if t equals 1969 through 1985 and 0 otherwise.

$Precipitation_t$ = July rainfall in year t

$Precipitation_t^2$ = the $Precipitation_t$ term squared

$Temperature_t$ = average temperature during July or August (tasseling and silking period) in year t

e_t = error term.

Increases in annual per-acre corn yields during the past several decades are attributable to the adoption of more productive farming practices and more intensive use of farm inputs. These factors generally are captured econometrically in a trend term. Trend reflects, among other things, productivity gains resulting from increased planting of higher-yielding corn hybrids, greater use of fertilizer and pesticides, increased mechanization, higher seeding rates, more efficient cultural practices, and better management skills.

Prior to 1941, national average corn yields exhibited virtually no trend. Since then, however, three separate trends have been identified (6). The average U.S. trend yield was about 0.75 bushel per acre from 1941 to 1955. The 1955-69 average annual increase was significantly higher, at 2.9 bushels per acre. The yield trend thereafter, however, has declined to 2.2 bushels per acre.

Because most of the national corn crop is grown in the 10 major producing States, one could postulate that a similar shift in trends occurred at the State level as well. This hypothesis was investigated by testing whether State-level yield trends were not as steep from 1969 to 1985 compared with 1955-69 trends. A shift in the constant term (y intercept) and a shift in the trend term (slope) were specified in each State yield equation to test for the postulated downward shift in yield trends during the latter period.

The first precipitation variable reflects July rainfall, while temperature variables represent July conditions for States in the Corn Belt and Northern Plains and August conditions in the Lake States. Weather variables are measured in normalized z scores, which reflect the number of standard deviations from the mean for each series. For example, the 1985 z score for precipitation in Iowa was calculated by subtracting the mean of the precipitation series from the July 1985 precipitation, and then dividing the result by the standard deviation for the series. The second precipitation variable, which is the first precipitation term squared, was included to determine whether marginal yield gains attributable to increased rainfall diminish at some point.

In addition to the aforementioned variables, a dummy variable (D1970) was included in the equations for the Corn Belt States to account for the severe southern corn blight in 1970. Similarly, a dummy variable (D1974) was included in the equations for Michigan, Minnesota, and Wisconsin to measure the yield-reducing effects of late-spring and early-fall frosts in 1974.

State-level data used to estimate the yield equations are reported by USDA. Corn yield data were obtained from the National Agricultural Statistics Service's (formerly the Statistical Reporting Service) *Crop Production*

Summary for 1985 and previous years (9). Weather data, from which z scores were computed, were obtained from a recent Economic Research Service bulletin (10).

Preliminary yield equations were estimated with the aforementioned parameters as well as variables accounting for per-acre applications of total fertilizer, nitrogen, phosphorus, and potash; nominal and real prices for fertilizer and corn; relative fertilizer prices; plantings; and idled acreage. Estimated results were inconclusive because some had coefficients with signs opposite expectations and others consistently yielded nonsignificant estimated coefficients.

State-level analysis shows that fertilizer application rates and the time trend are highly correlated, and that estimated coefficients for fertilizer generally are not statistically significant. Consequently, measures of fertilizer use were not considered in the final equations. Corn productivity gains due to increased fertilizer use are embodied in the estimated coefficients for trend, which also are interpreted to reflect gains attributable to the adoption of improved hybrid varieties, more efficient production practices, and more intensive use of other farm inputs over the past three decades.

Yield Estimations

With adjusted R^2's ranging from 0.79 to 0.95 for the 10 State-level yield equations, most of the annual variation in 1955-85 per-acre corn yields is explained by technological change and weather (table A). Estimated coefficients all had the expected signs, and, with a few exceptions, were statistically significant at the 5-percent confidence level.

Annual productivity increases from 1955 to 1985 that can be attributed to technological gains were fairly consistent across most States, at 1.5 to 2.2 bushels per acre. Nebraska, however, with a substantial proportion of corn acreage irrigated, showed an annual gain of nearly 2.8 bushels per acre during 1955-85. Trend yields for Illinois, Indiana, Iowa, Nebraska, and Wisconsin flattened out after 1969, as reflected by the trend and constant shifters. The annual yield trend in Illinois declined from 2.9 bushels per acre from 1955 to 1969, to 1.6 bushels per acre after 1969. Similarly, declines in yield trends for the other four States ranged from 0.9 bushel in Nebraska to 1.4 bushels in Iowa. Estimated results determined that a flattening out of yield trends did not occur in the remaining five States after 1969.

As a rule, estimated coefficients for precipitation and temperature show that the effects of weather are more pronounced moving south and west across the 10 major producing States, from Michigan to Missouri. For precipitation, each additional increase of one standard deviation above the average July rainfall raises per-acre corn yields from 2.6 bushels in Indiana to 8.9 bushels in Missouri.

Coefficients of variation (C.V.), computed by dividing the standard deviation for each series by its mean, reveal why, all things being equal, rainfall progressively influences yields to a greater extent in States further south and west in this contiguous growing region. The 1955-85 precipitation C.V. for Missouri is 48.7 percent, followed by about 41.75 percent for both Nebraska and South Dakota (table B). This compares with 24.3 for Wisconsin and 24.7 for Michigan, suggesting that July precipitation is more dependable in the Lake States than in States further south and west.

One might expect that, for the Northern Plains States, the value of the precipitation coefficients for Nebraska would be lower than

Change in Corn Yield Trend for Illinois

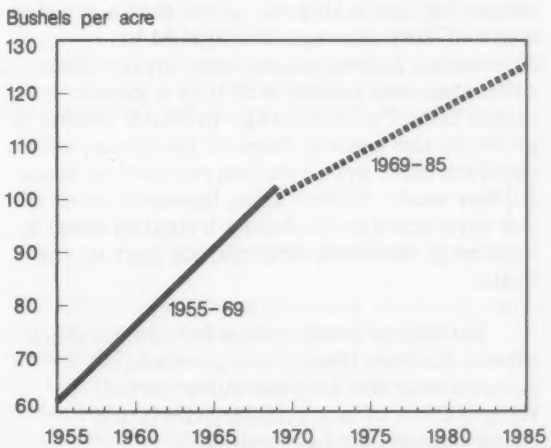

Table A.--Estimated corn yield equations for 1955-85 1/

Region and State	Explanatory variables									Adjusted R^2	D.W. Statistic
		1969-85 shift in:									
	Constant	Technology	Constant	Technology	Precipitation	Precipitation squared	Temperature	D1970	D1974		
CORN BELT:											
Illinois	59.07 (13.30)	2.89 (5.56)	17.80 (1.76)	-1.32 (-2.09)	7.77 (4.30)	-3.58 (-3.30)	-3.52 (-2.13)	-22.07 (-2.72)		0.89	1.99
Indiana	56.61 (11.33)	2.52 (4.28)	22.06 (1.93)	-1.26 (-1.73)	5.91 (3.33)	-3.27 (-3.36)	-5.39 (-3.35)	-25.51 (-2.82)		0.84	2.45
Iowa	51.33 (9.46)	2.99 (4.96)	18.51 (1.62)	-1.37 (-1.84)	4.66 (2.69)	-1.81 (-1.12)	-4.27 (-2.35)			0.84	1.84
Missouri	44.83 (12.71)	1.82 (9.56)			13.15 (5.52)	-4.26 (-3.94)	-4.76 (-2.66)			0.79	2.27
Ohio	56.04 (17.32)	1.94 (11.38)			4.36 (2.64)	-1.56 (-1.93)	-3.13 (-2.06)			0.83	2.60
LAKE STATES:											
Michigan	47.49 (20.97)	1.70 (14.57)			3.54 (2.96)	-0.53 (-0.57)	-1.08 (-1.01)		-14.70 (-2.37)	0.88	2.00
Minnesota	49.16 (14.90)	2.03 (12.10)			6.08 (3.85)	-2.59 (-2.05)	-3.24 (-2.13)		-23.75 (-2.78)	0.85	1.71
Wisconsin	52.53 (10.91)	2.58 (4.41)	14.10 (1.40)	-1.27 (-1.85)	4.32 (2.78)	-1.15 (-1.39)	-1.43 (-0.90)		-20.11 (-2.53)	0.81	2.05
NORTHERN PLAINS:											
Nebraska	32.32 (8.52)	3.26 (7.83)	15.14 (1.93)	-0.92 (-1.80)	9.36 (6.11)	-2.80 (-4.08)	-1.86 (-1.41)			0.95	2.04
S. Dakota	25.24 (8.78)	1.47 (10.41)			6.54 (4.40)	-1.77 (-1.59)	-2.92 (-2.15)			0.82	2.24

1/ t-statistics are presented parenthetically.

values for South Dakota, given that a greater share of corn acreage is irrigated in Nebraska. A possible explanation for these estimates may be the fact that a greater proportion of corn acreage in South Dakota is grown in the eastern third of the State, which receives more precipitation relative to areas further west. In Nebraska, however, most of the corn acreage (including irrigated area) is located in the more arid central part of the State.

Estimated coefficients for temperature show a similar, though less pronounced, pattern over the 31-year study period. A temperature of one standard deviation above the series mean annually reduced per-acre yields from 1.1 bushels in Michigan to about 5.4 bushels in Indiana. For the Corn Belt, with the exception of Indiana, negative coefficients rose from east to west, from 3.1 bushels in Ohio to 4.8 bushels in Missouri. Overall, variation in temperature, as measured by C.V.'s, was much less than for precipitation, ranging from a low of about 2.3 percent for Ohio to about 3.6 percent for Minnesota.

In 1970, the southern corn blight drastically reduced per-acre corn yields in the eastern Corn Belt (Illinois, Indiana, and Ohio) and the South (7). Corn yields in the western Corn Belt and Northern Plains (though reduced by hot, dry weather) and Lake States were not affected by the blight. Estimated coefficients show that the corn blight reduced

Table B.--Corn yield trends and weather statistics for 1955-85

Region and State	Estimated trend yield	Statistic	July precipitation	Temperature 1/
	Bushels		Inches	Degrees 2/
CORN BELT:				
Illinois	3/ 2.89	Mean	4.15	75.52
	4/ 1.57	Std. dev.	1.42	1.99
	5/ 2.17	C.V. 6/	34.22	2.64
Indiana	3/ 2.52	Mean	4.14	74.04
	4/ 1.26	Std. dev.	1.38	1.92
	5/ 1.83	C.V. 6/	33.33	2.59
Iowa	3/ 2.99	Mean	4.01	74.11
	4/ 1.62	Std. dev.	1.52	2.35
	5/ 2.24	C.V. 6/	37.91	3.17
Missouri	1.82	Mean	3.98	78.01
		Std. dev.	1.94	2.20
		C.V. 6/	48.74	2.82
Ohio	1.94	Mean	3.92	72.88
		Std. dev.	1.15	1.66
		C.V. 6/	29.34	2.28
LAKE STATES:				
Michigan	1.70	Mean	2.99	69.04
		Std. dev.	0.74	2.22
		C.V. 6/	24.75	3.22
Minnesota	2.03	Mean	3.57	69.10
		Std. dev.	1.19	2.49
		C.V. 6/	33.33	3.60
Wisconsin	3/ 2.58	Mean	3.70	68.53
	4/ 1.31	Std. dev.	0.90	2.24
	5/ 1.88	C.V. 6/	24.32	3.27
NORTHERN PLAINS:				
Nebraska	3/ 3.26	Mean	3.19	75.90
	4/ 2.34	Std. dev.	1.33	2.33
	5/ 2.76	C.V. 6/	41.69	3.07
South Dakota	1.47	Mean	2.68	73.79
		Std. dev.	1.12	2.58
		C.V. 6/	41.79	3.50

1/ July values for States in the Corn Belt and Northern Plains and August values for the Lake States. 2/ Fahrenheit. 3/ 1955-69 trend yield. 4/ 1969-85 trend yield. 5/ Weighted average of 1955-69 and 1969-85 trend yields. 6/ Expressed in percentage terms, and is the standard deviation divided by the mean.

average yields by 22.1 bushels per acre in Illinois and by 25.5 bushels in Indiana. However, the estimated coefficient for blight in Ohio was not statistically significant, and subsequently, was not included in the final equation. Also, 1974 frost dummy variables for the Lake States' equations reveal that yields were reduced from 14.7 bushels per acre in Michigan to 23.8 bushels in Minnesota.

Corn Yield Projections

Out-of-sample projections for State-level per-acre corn yields are made for 1986 through 1988, based on estimated coefficients for technology and weather. Yields are presented for nine weather scenarios--combinations of low, normal, and high precipitation with low, normal, and high

temperatures. Low and high scenarios for both temperature and precipitation reflect a z score of 1 on either side of normal conditions. For instance, the estimated coefficient for precipitation in Illinois shows that a z score of 1 above (below) the mean increases (reduces) the average yield by 4.2 bushels per acre. Combined with estimates for the three precipitation assumptions and technology, we get an estimated range of about 112 to 135 bushels per acre for Illinois in 1986 (table C).

Annual yield projections can vary significantly for a given State under the alternative weather scenarios considered. While 1986–88 yield estimates range by about 9 bushels per acre in Michigan, yield estimates in Missouri range by 36 bushels, again reflecting more stable weather (growing conditions) in the Lake States. Assuming normal weather, 1988 yields are estimated to range from a high of 130 bushels per acre in Illinois to a low of 75 bushels in South Dakota.

Table C.—Corn yield projections for alternative weather scenarios

State	Year	Low temperature			Normal temperature			High temperature			Range
		Precipitation			Precipitation			Precipitation			
		Low	Normal	High	Low	Normal	High	Low	Normal	High	
		Bushels per acre									
CORN BELT:											
Illinois	1986	119.3	130.6	134.8	115.8	127.1	131.3	112.2	123.6	127.8	112.2-134.8
	1987	120.9	132.2	136.4	117.3	128.7	132.9	113.8	125.2	129.4	113.8-136.4
	1988	122.4	133.8	138.0	118.9	130.3	134.4	115.4	126.7	130.9	115.4-138.0
Indiana	1986	115.2	124.4	127.0	109.8	119.0	121.6	104.4	113.6	116.2	104.4-127.0
	1987	116.5	125.6	128.3	111.1	120.3	122.9	105.7	114.9	117.5	105.7-128.3
	1988	117.7	126.9	129.5	112.3	121.5	124.2	106.9	116.1	118.8	106.9-129.5
Iowa	1986	119.5	126.0	128.8	115.2	121.7	124.5	110.9	117.4	120.3	110.9-128.8
	1987	121.1	127.6	130.4	116.8	123.3	126.2	112.6	119.0	121.9	112.6-130.4
	1988	122.7	129.2	132.0	118.5	124.9	127.8	114.2	120.7	123.5	114.2-132.0
Missouri	1986	90.4	107.8	116.7	85.7	103.1	112.0	80.9	98.3	107.2	80.9-116.7
	1987	92.2	109.7	118.5	87.5	104.9	113.8	82.7	100.1	109.0	82.7-118.5
	1988	94.1	111.5	120.4	89.3	106.7	115.6	84.5	102.0	110.8	84.5-120.4
Ohio	1986	115.3	121.3	124.1	112.2	118.1	120.9	109.1	115.0	117.8	109.1-124.1
	1987	117.3	123.2	126.0	114.1	120.1	122.9	111.0	116.9	119.7	111.0-126.0
	1988	119.2	125.1	127.9	116.1	122.0	124.8	113.0	118.9	121.7	113.0-127.9
LAKE STATES:											
Michigan	1986	98.9	103.0	106.0	97.8	101.9	104.9	96.7	100.8	103.8	96.7-106.0
	1987	100.6	104.7	107.7	99.5	103.6	106.6	98.4	102.5	105.5	98.4-107.7
	1988	102.3	106.4	109.4	101.2	105.3	108.3	100.1	104.2	107.2	100.1-109.4
Minnesota	1986	108.7	117.4	120.9	105.4	114.1	117.6	102.2	110.9	114.4	102.2-120.9
	1987	110.7	119.4	122.9	107.5	116.1	119.6	104.2	112.9	116.4	104.2-122.9
	1988	112.7	121.4	124.9	109.5	118.2	121.7	106.3	114.9	118.4	106.3-124.9
Wisconsin	1986	104.5	110.0	113.2	103.1	108.6	111.7	101.7	107.1	110.3	101.7-113.2
	1987	105.8	111.3	114.5	104.4	109.9	113.0	103.0	108.4	111.6	103.0-114.5
	1988	107.1	112.6	115.8	105.7	111.2	114.3	104.3	109.7	112.9	104.3-115.8
NORTHERN PLAINS:											
Nebraska	1986	112.0	124.2	130.8	110.2	122.3	128.9	108.3	120.5	127.0	108.3-130.8
	1987	114.4	126.5	133.1	112.5	124.7	131.2	110.7	122.8	129.4	110.7-133.1
	1988	116.7	128.9	135.4	114.9	127.0	133.6	113.0	125.2	131.7	113.0-135.4
South Dakota	1986	66.9	75.2	80.0	64.0	72.3	77.1	61.1	69.4	74.1	61.1-80.0
	1987	68.4	76.7	81.4	65.4	73.8	78.5	62.5	70.8	75.6	62.5-81.4
	1988	69.8	78.1	82.9	66.9	75.2	80.0	64.0	72.3	77.1	64.0-82.9

With near ideal growing conditions in most of the major producing States during 1986, November 1986 USDA estimates for this season's average per-acre corn yields were within 1.7 bushels of the upper range in three States (Minnesota, Missouri, and Nebraska), within 2.8 to 4 bushels in five other States (Illinois, Indiana, Michigan, Ohio, and Wisconsin), and about 6 bushels above estimates for Iowa and South Dakota (8).

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AGRICULTURAL COMMODITY OPTIONS: CONSIDERATIONS FOR PRODUCERS

by

Linwood A. Hoffman, Richard Heifner, and Gerald Plato 1/

Abstract: This article reviews the current status of agricultural commodity options trading, compares characteristics of options and futures, identifies ways producers can use options, and describes the potential effects of such use on farmers' revenues. While soybeans, corn, and cattle are the most actively traded agricultural commodity options contracts, trading volume generally has remained small relative to volume in underlying futures trading. By buying options, farmers can reduce revenue uncertainties while avoiding the margin calls associated with futures trading. Purchasing put options, like forward selling, concentrates revenue prospects around the average level, but the resulting distributions of revenues differ in subtle ways.

Keywords: Commodity options, hedging, forward contracting, farmers' pricing strategies, risk, risk management.

Introduction

After a 48-year interruption, trading in agricultural commodity options resumed in October 1984. The new option contracts offer features that can be useful to farmers. Like futures and cash forward contracts, options offer farmers a means to shift price risks and reduce revenue uncertainty. This new risk management tool could help farmers who are under continued financial pressure.

Risk is present when an activity can result in more than one outcome, the actual outcome is not fully predictable, and some possible outcomes are less desirable than others. A cropping enterprise is exposed to risks from many sources, including weather, prices, interest rates, disease, and insect infestation. These risks can be aggregated into an overall revenue risk for the enterprise. The farmer is particularly concerned that revenues may drop too low to cover variable costs of production or allow repayment of loans.

Commodity options, like commodity futures contracts or cash forward contracts, provide farmers with a means for shifting price risks for a limited time, generally 15 months or less. Properly used, these contracts can effectively reduce revenue uncertainty over the period of a production loan. They are not well suited for reducing risks over the longer periods required to repay loans on machinery or land. However, a farmer who can effectively use these short-term risk management tools may be a better candidate for long-term loans as well.

Since only a small proportion of farmers sell their crops forward in futures markets (Helmuth, pp. 20-41), the question arises as to whether farmers will use options. Answering this question requires that the mechanism of options trading and its costs and benefits be well understood. What are options' strengths and weaknesses? How do they compare to other pricing tools? This article reviews the status of commodity options trading, compares the characteristics of options and futures, identifies ways producers can use options, and compares likely outcomes from using options to those from forward contracting and spot sales at harvest.

Status of Commodity Options Trading

Trading in various types of commodity options or "privileges" began in the United States over 100 years ago. Options trading has a checkered history because of alleged improprieties and tendencies to increase price

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volatility. It was outlawed by the exchanges on various dates and taxed out of existence in 1921. Trading reemerged after the tax was declared illegal in 1926. The Commodity Exchange Act of 1936 banned options trading in domestic agricultural commodities until its 1984 repeal.

In 1984, a 3-year pilot program in agricultural commodity options trading was authorized by the Commodity Futures Trading Commission (CFTC). It follows a similar pilot program for mostly nonagricultural options that began in 1981. Both resulted from a renewed public interest in options trading, perhaps reflecting the successful trading of stock options, and a belief that exchanges and the CFTC now know how to prevent abuses on options markets.

Options are traded on the same trading floors and through similar brokers and communication networks as the underlying futures contracts. Trading has gotten off to a reasonably good start since its inception in October 1984, but volume generally has been small relative to corresponding futures trading. Soybeans, corn, and cattle are the most active agricultural commodity options contracts. The contracts now being traded are listed in table I along with trading volumes for selected months.

More farmers use cash contracts with local buyers than futures contracts on organized exchanges. This suggests that local or "trade" options would fill an important need not fully met by existing exchange-traded options. But the law prohibits off-exchange trading of options. To circumvent this restriction and accommodate farmers' preferences, some local buyers of farm products have begun offering "minimum price forward contracts." For a premium, the farmer is guaranteed a minimum price stated in the contract, but gets a higher price if the market price increases. Since delivery of the commodity is required, these are not considered option contracts by the CFTC and, therefore, are not regulated.

Table I. Monthly Volume of Trading in Domestic Agricultural Options, Selected Months from November 1984 to September 1986.

Commodity	Exchange 1/	1984	1985						1986				
		Nov.	Jan.	Mar.	May	July	Sept.	Nov.	Jan.	Mar.	May	July	Sept.
		Number of contracts 2/											
Soybeans	CBT	35,136	64,948	56,153	62,079	98,498	72,923	94,700	62,915	63,464	83,329	69,000	66,292
Soybeans	MACE	--	--	1,077	628	573	507	1,438	688	593	679	465	444
Corn	CBT	--	--	17,774	25,541	56,011	42,662	48,034	42,827	40,473	62,844	49,436	53,376
Wheat	KCBT	89	442	585	549	2,361	1,761	1,986	2,319	677	2,208	1,162	1,523
Wheat (soft red)	MACE	779	607	321	473	295	296	1,065	712	354	1,545	559	696
Wheat (spring)	MGE	279	374	287	309	610	809	802	849	339	165	274	437
Cotton	NYCE	1,167	3,776	2,697	3,118	2,005	1,791	1,891	3,044	4,930	4,841	5,579	11,149
Citrus	NYCE	--	--	--	--	--	--	--	1,900	277	103	62	80
Cattle	CME	10,686	14,827	18,020	23,584	17,667	34,577	47,769	61,894	45,181	66,944	69,396	51,140
Hogs	CME	--	--	5,375	4,661	6,538	5,108	5,497	4,518	5,757	7,652	9,873	13,505

1/ CBT = Chicago Board of Trade; MACE = MidAmerica Commodity Exchange; MGE = Minneapolis Grain Exchange; KCBT = Kansas City Board of Trade; NYCE = New York Cotton Exchange; and CME = Chicago Mercantile Exchange. 2/ Puts and calls combined. For the grains and soybeans calls generally outnumber puts.

Source: Monthly Options Report, Futures Industry Association, Inc.

Characteristics of Commodity Option Contracts 2/

The buyer of a commodity option obtains a right, but incurs no obligation, to buy or sell a specified commodity or commodity futures contract for a set price during a given time period. The agricultural commodity options currently traded on U.S. exchanges convey rights and obligations to buy or sell futures contracts rather than actual commodities. A futures contract is a close substitute for the actual commodity. A right to buy is known as a call option, whereas a right to sell is known as a put option. The buyer acquires either right by paying a premium that is known as the price of the option. The seller of the right incurs an obligation to sell or buy the futures contract at the set price upon the buyer's (option holder's) demand. The set price is called the strike price or exercise price.

Each option contract specifies a strike price and a maturity date that has been set at a specified number (usually from 3 to 10) of business days before delivery starts on the underlying futures contract. The option can be exercised on any date up to the maturity date. For example, purchase of a $1.80 put option for March corn would allow the option buyer to sell a 5,000–bushel March corn futures contract at $1.80 at any time up to about February 20th.

Options with several different strike prices are traded concurrently for each futures contract. The exchange would initially offer trading on corn option contracts with strike prices of $1.50, $1.60, $1.70, $1.80, $1.90, $2.00, and $2.10 if the March corn futures contract were $1.80. Whenever the futures price moves more than $0.10 in either direction, an additional option contract would be added. Thus, if the futures eventually moved above $1.90 and then above $2.00, new option contracts would be added at $2.20 and $2.30.

Unlike the buyer or seller of a futures contract, an option buyer does not have to post initial margin and is not subject to margin calls. After paying the premium and commission, the option buyer has no further financial obligations unless the option is exercised. Upon exercising the option, the put (call) option buyer acquires a short (long) futures position at the exercise price, that must either be offset through a trade or delivered upon like any other futures contract. The seller of an option contract, in contrast, must make an initial margin deposit, which is normally covered by the option premium that the buyer pays. The option seller remains subject to margin calls until the option matures, and if the option is exercised, obtains a futures position opposite to the one demanded by the option holder. Both sides of the futures contract are immediately marked to market--evaluated at the current futures price--which results in funds being deposited in the option holder's account and an equal amount withdrawn from the option writer's account.

Option Pricing

The relationships between option premiums and local cash prices for commodities are much more complex than the relationships between futures prices and local cash prices. This complexity, combined with lack of experience in trading options, leaves most farmers with little background for judging on their own what options are worth. Some basic understanding of the factors that determine the value of options is needed if farmers are to make sound decisions about using these markets.

The value of an option is the sum of its intrinsic value and its time value. The intrinsic value is the positive amount that would be realized by exercising the option immediately and closing out the resulting futures position at the market price. The intrinsic value is zero if the option cannot be profitably exercised. If the intrinsic value is positive, the option is said to be "in the money." Thus, a call option with a strike price below the futures market price is "in the money", as is a put option with a strike price above the futures market price. An option is "at the money" if the strike price equals the market price for the future. An option is "out

2/ This brief introduction to commodity option contracts provides only the minimum information needed to follow the subsequent discussion. Readers interested in more background on commodity options may wish to refer to Kenyon or some of the publications on commodity options issued by the exchanges.

of the money" when it cannot be exercised advantageously--when the futures price is less than the strike price for a call or when the futures price is more than the strike price for a put.

The time value of an option is the value of waiting for potentially favorable futures price movements. The time value of an option approaches zero as the expiration date nears since the potential for favorable price movements gradually disappears.

The value of an option contract can be calculated as a function of five factors: the futures price, the strike price, time to option expiration, futures price variability, and the interest rate. The first three factors are known when the option is traded while price variability and the interest rate must be estimated. 3/

Larger futures price variabilities and longer times to option expiration increase the probabilities of large futures price movements from current levels. As a result, the probabilities of both extremely large and extremely small futures prices occurring at expiration are increased. Consequently, there is an increase in the probabilities of large exercise values for both puts and calls and current premiums on both increase.

The interest rate determines the present value of potential future exercise values. Hence, increases in the interest rate decrease the option premium.

Advantages and Disadvantages of Options

By buying a put option a farmer can, in effect, establish a minimum selling price while leaving open the possibility of gaining from price increases. The option buyer pays a nonrefundable premium at the outset, but avoids any subsequent margin calls.

Buying and holding put options is more convenient for farmers in several respects than selling and holding short positions in the futures market. Whereas a futures position must always be closed out with an opposite trade or by delivery, an option can simply be allowed to expire on those occasions when its value approaches zero as the actual product is sold.

More importantly, the option buyer avoids margin calls. Margins are the good faith money that the buyer or seller of a futures contract deposits with a broker to guarantee performance on the contract. Initial margins typically amount to 5 to 10 percent of the value of the contract. The broker calls for additional margin--maintenance margin--when the price moves against the trader. For the farmer who has sold futures contracts, margin calls occur when the futures price rises. These must be paid within 3 or fewer days.

Margin calls create cash flow problems for farmers because losses on futures contracts are realized immediately, whereas gains on the cash position are not. Farmers must arrange to meet potential margin calls, since the broker must close out the futures position. Such close out would expose the farmer to all the risks in the cash market, if required margin money is not deposited.

The option buyer must pay the option premium up front. The premium is not refundable at the end of the contract period, as is a futures margin deposit. Premiums for at-the-money options maturing 3 to 6 months in the future often range from 3 to 8 percent of the futures price.

The current relatively low volume of trading on some commodity options markets may pose problems of liquidity, possibly making prices more erratic than they would be if more trades were involved.

Ways Farmers Can Use Options 4/

Farmers can use commodity options in several different ways to shift risks or seek higher profits. Buying put options to set a floor on the price of crops or livestock being

3/ The most common method for estimating the price of commodity options is the formula provided by Black. Plato has described an alternative method that is more precise for options that can be exercised before maturity, which includes all U.S. commodity options.

4/ For a discussion of ways the farmers can use futures and cash forward contracts as well as options see Paul, Heifner, and Gordon.

produced is the most commonly discussed way that farmers can use options. As in hedging in futures or cash forward contracting, a put option would normally be purchased as funds are borrowed and resources are committed to crop production or a livestock feeding enterprise. If prices are depressed when the crop is sold, the put option would be sold or exercised at a profit to compensate for the lower return from the crop. If prices rise, the producer can sell the crop at the higher price and let the option expire unused.

The purchase of call options by a livestock feeder is another way for farmers to use options. This procedure sets an upper limit on the price of feed that must be purchased at a later date. Buying call options to cover anticipated feed requirements is appropriate if the feeder wants protection against feed price increases while remaining in a position to gain from a feed price decline.

Still another way for the farmer to use options, but one subject to higher risks, is to sell call options against commodities being produced or in storage. In return for the premium received, which is deposited to the seller's margin account to cover initial margin, the seller of a call gives up the chance to gain from a price increase. In contrast to buying a put or selling a futures contract, selling a call provides no protection against large price declines. The seller of a call is subject to maintenance margin calls on price increases like the seller of a futures contract. Selling calls might be considered by a farmer who is protected from downside price risk by being eligible for Government price support and who thinks the futures price is likely to decline. A conservative strategy for such a farmer would be to sell out–of–the–money calls. This would guarantee at least the loan rate plus the option premium. Selling options can be very risky and is suitable only for skilled traders.

A farmer with sufficient financial resources can, of course, speculate on commodity puts and calls like any other qualified trader. Success in speculation depends upon one's ability to forecast price changes, which consideration is outside the scope of this article.

Effects on Producer Revenues— Comparison of Put Options, Forward Contracts, and Cash Sales

The farmer's objective in buying puts, selling futures, or entering cash forward contracts is to obtain a set of prospective revenues that is preferred to those for spot sales at harvest. Farmers generally prefer to reduce the probabilities of low revenues that occur with low prices. Some farmers also wish to retain some probability of achieving the extra high revenues that occur with high prices. Obviously, most all farmers would prefer to increase average revenue. However, competition among traders tends to ensure that buying puts or selling forward at fixed prices cannot be expected to increase average revenue over a period of years.

Results from analyzing yield and price variations for corn and soybeans demonstrate that the probabilities of revenues substantially below expectations can be reduced either by buying puts or selling part of the crop forward, (Hoffman, Heifner, and Plato; Heifner and Plato). However, the probability distributions of revenue from purchasing put options and from forward contracting differ in subtle ways. Buying puts results in higher probabilities of very high revenues than selling forward, but it also produces a somewhat higher probability of receiving slightly below–average revenues. Thus, in many years, a farmer who uses puts will receive a slightly lower return than his or her neighbor who hedges in futures, but the latter will miss out on the occasional high returns that occur when price rises substantially. Probabilities of extremely low revenues that might lead to serious financial problems appear to be about the same for buying puts as for selling forward in the presence of yield risk, but the evidence is inconclusive on this point.

Summary and Conclusions

Agricultural commodity options trading has gotten off to a reasonably good start since its inception in October 1984. However, trading volume generally remains small relative to corresponding futures trading.

The price of an option contract can be estimated as a function of five factors: the

futures price, the strike price, time to option expiration, futures price variability, and the interest rate. Unlike the buyer or seller of a futures contract, an option buyer does not have to post initial margin and is not subject to margin calls. After paying the premium and commission, the option buyer has no further financial obligations unless the option is exercised.

The most common way that farmers can use options is to buy a put so as to set a floor on the price of crops or livestock being produced. Either buying puts or selling futures at the beginning of the production period can reduce revenue uncertainty, but neither can be expected to raise average revenues unless the farmer is especially skilled in timing trades. Buying puts produces higher probabilities of extremely high revenues and higher probabilities of slightly below average revenues than does selling forward.

Either purchasing put options or forward selling can increase the probability that production loans can be paid off without difficulty. This suggests that both producers and lenders can benefit from producers' judicious use of options as well as futures.

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Table 1.--Corn, sorghum, oats, barley: Farm price, planted acreage, harvested acreage, production, and yield, 1950 to date

Year	CORN					SORGHUM				
	Farm price	Planted acreage	Harvested for grain	Production	Yield per harvested acre	Farm price	Planted acreage	Harvested for grain	Production	Yield per harvested acre
	Dol./bu.	- - 1,000 acres - -		1,000 bushels	Bushels	Dol./cwt	- - 1,000 acres - -		1,000 bushels	Bushels
1950	1.52	82,859	72,398	2,764,071	38.2	1.88	16,055	10,346	233,536	22.6
1951	1.66	83,275	71,191	2,628,937	36.9	2.36	15,028	8,544	162,863	19.1
1952	1.52	82,230	71,353	2,980,793	41.8	2.82	12,289	5,326	90,741	17.0
1953	1.48	81,574	70,738	2,881,801	40.7	2.36	14,590	6,295	115,719	18.4
1954	1.43	82,185	68,668	2,707,913	39.4	2.25	20,148	11,718	235,575	20.1
1955	1.35	80,932	68,462	2,872,959	42.0	1.74	23,921	12,891	242,638	18.8
1956	1.29	77,828	64,877	3,075,336	47.4	2.05	21,384	9,209	204,881	22.2
1957	1.11	73,180	63,065	3,045,355	48.3	1.74	26,886	19,682	567,506	28.8
1958	1.12	73,351	63,549	3,356,205	52.8	1.78	20,675	16,524	581,012	35.2
1959	1.05	82,742	72,091	3,824,598	53.1	1.53	19,508	15,406	555,441	36.1
1960	1.00	81,425	71,422	3,906,949	54.7	1.49	19,598	15,601	619,954	39.7
1961	1.10	65,919	57,634	3,597,803	62.4	1.80	14,294	10,985	480,208	43.7
1962	1.12	65,017	55,726	3,606,311	64.7	1.82	15,060	11,571	510,284	44.1
1963	1.11	68,771	59,227	4,019,238	67.9	1.74	17,516	13,326	585,394	43.9
1964	1.17	65,823	55,369	3,484,253	62.9	1.88	16,770	11,742	489,796	41.7
1965	1.16	65,171	55,392	4,102,867	74.1	1.76	17,079	13,029	672,698	51.6
1966	1.24	66,347	57,002	4,167,608	73.1	1.82	16,372	12,813	714,992	55.8
1967	1.03	71,156	60,694	4,860,372	80.1	1.77	18,945	14,988	755,344	50.4
1968	1.08	65,126	55,980	4,449,542	79.5	1.69	17,793	13,890	731,277	52.6
1969	1.16	64,264	54,574	4,687,057	85.9	1.91	17,231	13,437	729,919	54.3
1970	1.33	66,863	57,358	4,152,243	72.4	2.04	16,957	13,568	683,179	50.4
1971	1.08	74,179	64,123	5,646,260	88.1	1.86	20,547	16,142	867,997	53.8
1972	1.57	67,126	57,513	5,579,832	97.0	2.45	17,035	13,212	801,350	60.7
1973	2.55	72,253	62,143	5,670,712	91.3	3.82	18,994	15,700	923,224	58.8
1974	3.02	77,935	65,405	4,701,402	71.9	4.95	17,588	13,809	622,711	45.1
1975	2.54	78,719	67,625	5,840,757	86.4	4.23	18,080	15,403	754,354	49.0
1976	2.15	84,588	71,506	6,289,169	88.0	3.62	18,143	14,466	710,797	49.1
1977	2.02	84,328	71,614	6,505,041	90.8	3.25	16,636	13,797	780,944	56.6
1978	2.25	81,675	71,930	7,267,927	101.0	3.59	16,197	13,410	731,270	54.5
1979	2.52	81,394	72,400	7,928,139	109.5	4.20	15,277	12,901	807,422	62.6
1980	3.11	84,043	72,961	6,639,396	91.0	5.25	15,639	12,513	579,343	46.3
1981	2.50	84,097	74,524	8,118,650	108.9	4.25	15,930	13,677	875,835	64.0
1982	2.68	81,857	72,719	8,235,101	113.2	4.50	16,028	14,137	835,083	59.1
1983	3.25	60,217	51,483	4,174,678	81.1	5.07	11,880	10,001	487,521	48.7
1984	2.62	80,543	71,915	7,674,020	106.7	4.27	17,254	15,355	866,241	56.4
1985	2.35	83,348	75,134	8,865,006	118.0	3.84	18,285	16,672	1,112,571	66.7
1986 1/		76,646	68,951	8,222,576	119.3		14,973	13,494	900,039	66.7

Continued--

Table 1.--Corn, sorghum, oats, barley: Farm price, planted acreage, harvested acreage, production, and yield, 1950 to date--continued

Year	OATS					BARLEY				
	Farm price	Planted acreage	Harvested for grain	Production	Yield per harvested acre	Farm price	Planted acreage	Harvested for grain	Production	Yield per harvested acre
	Dol./bu.	- - 1,000 acres - -		1,000 bushels	Bushels	Dol./bu.	- - 1,000 acres - -		1,000 bushels	Bushels
1950	0.79	45,044	39,306	1,369,199	34.8	1.19	13,010	11,155	303,772	27.2
1951	.82	41,015	35,233	1,277,647	36.3	1.26	10,790	9,424	257,213	27.3
1952	.79	42,341	37,012	1,217,433	32.9	1.37	9,190	8,236	228,168	27.7
1953	.74	43,220	37,536	1,153,205	30.7	1.17	9,615	8,680	246,723	28.4
1954	.71	46,898	40,551	1,409,601	34.8	1.09	14,740	13,370	379,254	28.4
1955	.60	47,494	39,027	1,495,978	38.3	.92	16,293	14,523	403,065	27.8
1956	.69	44,205	33,333	1,151,398	34.5	.99	14,732	12,852	376,661	29.3
1957	.61	41,840	34,065	1,289,880	37.9	.89	16,398	14,872	442,761	29.8
1958	.58	37,699	31,247	1,401,410	44.8	.90	16,150	14,791	477,368	32.3
1959	.65	35,064	27,758	1,050,051	37.8	.86	16,766	14,869	420,203	28.3
1960	.60	31,419	26,588	1,153,332	43.4	.84	15,527	13,856	429,005	31.0
1961	.64	32,314	23,886	1,010,314	42.3	.98	15,623	12,806	392,441	30.6
1962	.62	29,500	22,377	1,012,197	45.2	.92	14,380	12,214	427,726	35.0
1963	.62	28,054	21,308	965,510	45.3	.90	13,452	11,236	392,833	35.0
1964	.63	25,634	19,759	852,257	43.1	.95	11,652	10,277	386,059	37.6
1965	.62	24,046	18,522	929,554	50.2	1.02	10,123	9,166	393,055	42.9
1966	.67	23,343	17,877	803,324	44.9	1.06	11,184	10,250	392,108	38.3
1967	.66	20,719	16,110	793,800	49.3	1.01	10,077	9,230	373,745	40.5
1968	.60	23,342	17,708	950,689	53.7	.92	10,486	9,732	426,151	43.8
1969	.58	23,561	17,971	965,863	53.7	.89	10,291	9,557	427,055	44.7
1970	.62	24,410	18,594	915,236	49.2	.97	10,476	9,712	416,091	42.8
1971	.60	21,831	15,705	878,079	55.9	.99	11,061	10,104	462,423	45.8
1972	.72	19,990	13,410	690,616	51.5	1.21	10,567	9,645	421,719	43.7
1973	1.18	18,605	13,770	659,136	47.9	2.14	11,045	10,295	417,434	40.5
1974	1.53	17,013	12,608	600,655	47.6	2.81	8,713	7,930	298,669	37.7
1975	1.46	16,434	13,038	638,960	49.0	2.42	9,373	8,617	379,162	44.0
1976	1.56	16,620	11,834	540,441	45.7	2.25	9,301	8,439	383,007	45.4
1977	1.09	17,732	13,485	752,774	55.8	1.78	10,778	9,728	427,784	44.0
1978	1.20	16,407	11,126	581,657	52.3	1.92	9,989	9,248	454,759	49.2
1979	1.36	13,960	9,682	526,748	54.4	2.29	8,116	7,527	383,201	50.9
1980	1.79	13,381	8,657	458,792	53.0	2.84	8,320	7,260	361,135	49.7
1981	1.89	13,632	9,407	509,529	54.2	2.44	9,618	9,038	473,512	52.4
1982	1.49	13,951	10,258	592,630	57.8	2.22	9,549	9,013	515,935	57.2
1983	1.67	20,289	9,072	476,961	52.6	2.50	10,422	9,731	508,925	52.3
1984	1.69	12,414	8,163	473,661	58.0	2.26	11,957	11,231	599,204	53.4
1985	1.25	13,255	8,177	520,800	63.7	2.00	13,156	11,603	591,383	51.0
1986 1/		14,708	6,987	383,553	54.9		13,033	11,985	599,843	50.0

1/ Preliminary.

Source: Agricultural Statistics Board, National Agricultural Statistics Service, USDA.

Table 2.--Feed grains: Marketing year supply and disappearance, 1975/76-1986/87 1/

Year 2/	Supply				Disappearance						Ending stocks		
					Domestic use							Privately	
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 3/	Total
	Million metric tons												
1975/76	21.1	185.0	0.4	206.5	16.5	1.5	115.4	133.4	49.2	182.6	0.4	23.5	23.9
1976/77	23.9	194.0	0.3	218.2	17.1	1.6	112.5	131.2	50.1	181.3	---	36.9	36.9
1977/78	36.9	205.3	0.3	242.5	18.0	1.5	117.1	136.6	55.6	192.2	0.2	50.1	50.3
1978/79	50.3	221.5	0.3	272.1	19.2	1.4	134.3	154.9	59.5	214.4	3.8	53.9	57.7
1979/80	57.7	237.9	0.3	295.9	20.0	1.4	139.7	161.1	71.0	232.1	7.8	56.0	63.8
1980/81	63.8	197.9	0.3	262.0	22.1	1.3	123.9	147.3	70.5	217.8	7.3	36.9	44.2
1981/82	44.2	246.2	0.3	290.7	24.0	1.4	127.4	152.8	59.9	212.7	8.3	69.7	78.0
1982/83	78.0	250.2	0.3	328.5	26.5	1.4	139.0	166.9	53.0	219.9	33.5	75.1	108.6
1983/84	108.6	136.4	0.7	245.7	28.3	1.5	119.7	149.5	56.6	206.1	8.0	31.6	39.6
1984/85	39.6	236.9	0.8	277.3	30.6	1.5	131.1	163.2	56.6	219.8	8.9	48.6	57.5
1985/86	57.5	273.9	0.9	332.3	32.7	1.5	135.2	169.4	36.6	206.0	20.4	105.9	126.3
1986/87 4/	126.3	250.4	0.6	377.3	- - 35.1 - -		133.6	168.7	40.3	209.0	32.9	135.4	168.3

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year for corn and sorghum begins September 1; for oats and barley, June 1. 3/ Includes total Government loans (original and reseal). 4/ Projected.

Table 3.--Corn: Marketing year supply and disappearance, specified periods, 1975/76-1986/87

Year beginning September 1	Supply				Disappearance						Ending stocks		
					Domestic use				Exports	Total disappearance			
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed	Feed and residual	Total			Govt. owned	Privately owned 1/	Total
	Million bushels												
1975/76													
Sept.-Nov.	558.0	5,840.8	0.3	6,399.1	123.8	---	923.8	1,047.6	376.9	1,424.5	0.3	4,974.3	4,974.6
Dec.-Feb.	4,974.6	---	0.7	4,975.3	114.4	---	1,057.8	1,172.2	429.5	1,601.7	0.2	3,373.4	3,373.6
Mar.-May	3,373.6	---	0.2	3,373.8	130.0	16.1	909.4	1,055.5	449.5	1,505.0	0.4	1,868.4	1,868.8
June-Aug.	1,868.8	---	0.5	1,869.3	132.5	4.0	677.8	814.3	421.8	1,236.1	0.2	633.0	633.2
Mkt. year	558.0	5,840.8	1.7	6,400.5	500.7	20.1	3,568.8	4,089.6	1,677.7	5,767.3	0.2	633.0	633.2
1976/77													
Sept.-Nov.	633.2	6,289.2	0.5	6,922.9	130.3	---	933.9	1,064.2	471.5	1,535.7	0.2	5,387.0	5,387.2
Dec.-Feb.	5,387.2	---	0.4	5,387.6	117.9	---	1,036.2	1,154.1	385.3	1,539.4	0.1	3,848.1	3,848.2
Mar.-May	3,848.2	---	0.6	3,848.8	131.9	16.1	897.2	1,045.2	433.6	1,478.8	0.3	2,369.7	2,370.0
June-Aug.	2,370.0	---	1.0	2,371.0	142.0	4.0	723.1	869.1	366.3	1,235.4	0.2	1,135.4	1,135.6
Mkt. year	633.2	6,289.2	2.5	6,924.9	522.1	20.1	3,590.4	4,132.6	1,656.7	5,789.3	0.2	1,135.4	1,135.6
1977/78													
Sept.-Nov.	1,135.6	6,505.0	0.7	7,641.3	138.9	---	1,013.5	1,152.4	402.2	1,554.6	0.2	6,086.5	6,086.7
Dec.-Feb.	6,086.7	---	0.7	6,087.4	128.6	---	1,066.4	1,195.0	410.8	1,605.8	0.4	4,481.2	4,481.6
Mar.-May	4,481.6	---	0.6	4,482.2	141.7	15.6	935.6	1,092.9	528.2	1,621.1	0.4	2,860.7	2,861.1
June-Aug.	2,861.1	---	0.6	2,861.7	152.3	3.9	701.7	857.9	567.9	1,425.8	3.5	1,432.4	1,435.9
Mkt. year	1,135.6	6,505.0	2.6	7,643.2	561.5	19.5	3,717.2	4,298.2	1,909.1	6,207.3	3.5	1,432.4	1,435.9
1978/79													
Sept.-Nov.	1,435.9	7,267.9	0.2	8,704.0	146.7	---	1,157.9	1,304.6	471.2	1,775.8	60.3	6,867.9	6,928.2
Dec.-Feb.	6,928.2	---	0.4	6,928.6	135.1	---	1,226.7	1,361.8	415.7	1,777.5	95.2	5,055.9	5,151.1
Mar.-May	5,151.1	---	0.3	5,151.4	157.5	15.6	1,133.6	1,306.7	557.5	1,864.2	100.6	3,186.6	3,287.2
June-Aug.	3,287.2	---	0.4	3,287.6	149.2	3.9	745.7	898.8	679.3	1,578.1	100.5	1,609.0	1,709.5
Mkt. year	1,435.9	7,267.9	1.3	8,705.1	588.5	19.5	4,263.9	4,871.9	2,123.7	6,995.6	100.5	1,609.0	1,709.5
1979/80													
Sept.-Nov.	1,709.5	7,928.1	0.3	9,637.9	151.5	---	1,267.5	1,419.0	624.8	2,043.8	99.6	7,494.5	7,594.1
Dec.-Feb.	7,594.1	---	0.2	7,594.3	140.3	---	1,296.2	1,436.5	600.8	2,037.3	100.1	5,456.9	5,557.0
Mar.-May	5,557.0	---	0.2	5,557.2	159.6	16.0	1,146.1	1,321.7	591.2	1,912.9	213.5	3,430.8	3,644.3
June-Aug.	3,644.3	---	0.2	3,644.5	168.1	4.0	839.5	1,011.6	598.6	1,610.2	260.1	1,774.2	2,034.3
Mkt. year	1,709.5	7,928.1	0.9	9,638.5	619.5	20.0	4,549.3	5,188.8	2,415.4	7,604.2	260.1	1,774.2	2,034.3
1980/81													
Sept.-Nov.	2,034.3	6,639.4	0.5	8,674.2	168.7	---	1,217.9	1,386.6	691.7	2,078.3	256.7	6,339.2	6,595.9
Dec.-Feb.	6,595.9	---	0.2	6,596.1	158.0	---	1,126.3	1,284.3	649.4	1,933.7	252.3	4,410.1	4,662.4
Mar.-May	4,662.4	---	0.2	4,662.6	181.7	16.2	1,072.4	1,270.3	618.8	1,889.1	251.6	2,521.9	2,773.5
June-Aug.	2,773.5	---	0.5	2,774.0	189.4	4.0	740.5	933.9	448.0	1,381.9	241.8	1,150.3	1,392.1
Mkt. year	2,034.3	6,639.4	1.4	8,675.1	697.8	20.2	4,157.1	4,875.1	2,407.9	7,283.0	241.8	1,150.3	1,392.1

Continued--

Table 3.--Corn: Marketing year supply and disappearance, specified periods, 1975/76-1986/87--continued

Year beginning September 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food, alcohol, and industrial	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks: Privately: Govt. owned	Ending stocks: Privately: owned 1/	Ending stocks: Total
					Million bushels								
1981/82													
Sept.-Nov.	1,392.1	8,118.7	0.2	9,511.0	188.8	---	1,198.4	1,387.2	522.7	1,909.9	243.6	7,357.5	7,601.1
Dec.-Feb.	7,601.1	---	0.4	7,601.5	180.2	---	1,182.0	1,362.2	472.9	1,835.1	259.3	5,507.1	5,766.4
Mar.-May	5,766.4	---	0.2	5,766.6	201.9	16.0	1,069.6	1,287.5	599.0	1,886.5	269.7	3,610.4	3,880.1
June-Aug.	3,880.1	---	0.3	3,880.4	206.9	3.4	718.6	928.9	414.9	1,343.8	280.1	2,256.5	2,536.6
Mkt. year	1,392.1	8,118.7	1.1	9,511.9	777.8	19.4	4,168.6	4,965.8	2,009.5	6,975.3	280.1	2,256.5	2,536.6
1982/83													
Sept.-Nov.	2,536.6	8,235.1	0.3	10,772.0	217.5	---	1,202.0	1,419.5	446.2	1,865.7	372.0	8,534.3	8,906.3
Dec.-Feb.	8,906.3	---	0.1	8,906.4	201.6	---	1,293.6	1,495.2	512.0	2,007.2	470.8	6,428.4	6,899.2
Mar.-May	6,899.2	---	0.2	6,899.4	226.6	11.6	1,258.3	1,496.5	479.0	1,975.5	491.7	4,432.2	4,923.9
June-Aug.	4,923.9	---	0.1	4,924.0	234.6	2.9	766.8	1,004.3	396.6	1,400.9	1,142.7	2,380.4	3,523.1
Mkt. year	2,536.6	8,235.1	0.7	10,772.4	880.3	14.5	4,520.7	5,415.5	1,833.8	7,249.3	1,142.7	2,380.4	3,523.1
1983/84													
Sept.-Nov.	3,523.1	4,174.7	0.5	7,698.3	238.6	---	1,311.0	1,549.6	497.0	2,046.6	1,227.0	4,424.7	5,651.7
Dec.-Feb.	5,651.7	---	0.6	5,652.3	222.8	---	1,056.0	1,278.8	508.5	1,787.3	1,214.0	2,651.0	3,865.0
Mar.-May	3,865.0	---	1.0	3,866.0	247.3	16.6	939.7	1,203.6	517.3	1,720.9	195.0	1,950.1	2,145.1
June-Aug.	2,145.1	---	0.6	2,145.7	247.3	2.3	511.1	760.7	378.7	1,139.4	201.5	804.8	1,006.3
Mkt. year	3,523.1	4,174.7	2.7	7,700.5	956.0	18.9	3,817.8	4,792.7	1,901.5	6,694.2	201.5	804.8	1,006.3
1984/85													
Sept.-Nov.	1,006.3	7,674.0	0.9	8,681.2	249.7	---	1,294.2	1,543.9	506.2	2,050.1	206.7	6,424.4	6,631.1
Dec.-Feb.	6,631.1	---	0.4	6,631.5	241.5	---	1,182.9	1,424.4	583.9	2,008.3	209.7	4,413.5	4,623.2
Mar.-May	4,623.2	---	1.1	4,624.3	267.8	15.6	1,026.5	1,309.9	478.9	1,788.8	221.7	2,613.8	2,835.5
June-Aug.	2,835.5	---	1.1	2,836.6	276.2	3.8	612.0	892.0	296.4	1,188.4	224.9	1,423.3	1,648.2
Mkt. year	1,006.3	7,674.0	3.5	8,683.8	1,035.2	19.4	4,115.6	5,170.2	1,865.4	7,035.6	224.9	1,423.3	1,648.2
1985/86													
Sept.-Nov.	1,648.2	8,865.0	1.0	10,514.2	271.5	---	1,210.3	1,481.8	417.7	1,899.5	388.6	8,226.1	8,614.7
Dec.-Feb.	8,614.7	---	1.3	8,616.0	259.0	---	1,304.6	1,563.6	465.3	2,028.9	509.4	6,077.7	6,587.1
Mar.-May	6,587.1	---	2.3	6,589.4	286.5	15.4	1,094.6	1,396.5	204.4	1,600.9	550.9	4,437.6	4,988.5
June-Aug.	4,988.5	---	6.0	4,994.5	293.0	3.2	506.4	802.6	153.8	956.4	546.0	3,492.1	4,038.1
Mkt. year	1,648.2	8,865.0	10.6	10,523.8	1,110.0	18.6	4,115.9	5,244.5	1,241.2	6,485.7	546.0	3,492.1	4,038.1
1986/87													
Sept.-Nov.													
Dec.-Feb.													
Mar.-May													
June-Aug.													
Mkt. year 2/	4,038.1	8,223.0	3.0	12,264.1	- 1,150.0 -		4,200.1	5,350.1	1,300.0	6,650.1	1,020.0	4,594.0	5,614.0

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected.

Table 4.--Sorghum: Marketing year supply and disappearance, specified periods, 1975/76-1986/87

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected.

Table 4.--Sorghum: Marketing year supply and disappearance, specified periods, 1975/76-1986/87

Year beginning September 1	Supply				Disappearance						Ending stocks		
					Domestic use								
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels												
1975/76													
Sept.-May	65.3	754.4	0	819.7	6.9	1.6	477.4	485.9	179.8	665.7	0	154.0	154.0
June-Aug.	154.0	0	0	154.0	1.9	0.7	16.7	19.3	52.4	71.7	0	82.3	82.3
Mkt. year	65.3	754.4	0	819.7	8.8	2.3	494.1	505.2	232.2	737.4	0	82.3	82.3
1976/77													
Sept.-May	82.3	710.8	0	793.1	6.7	1.4	385.0	393.1	204.3	597.4	0.3	195.4	195.7
June-Aug.	195.7	0	0	195.7	1.9	0.6	26.2	28.7	49.7	78.4	0.2	117.1	117.3
Mkt. year	82.3	710.8	0	793.1	8.6	2.0	411.2	421.8	254.0	675.8	0.2	117.1	117.3
1977/78													
Sept.-May	117.3	780.9	0	898.2	7.1	1.4	393.7	402.2	176.9	579.1	0.3	318.8	319.1
June-Aug.	319.1	0	0	319.1	2.3	0.6	53.8	56.7	46.0	102.7	5.0	211.4	216.4
Mkt. year	117.3	780.9	0	898.2	9.4	2.0	447.5	458.9	222.9	681.8	5.0	211.4	216.4
1978/79													
Sept.-May	216.4	731.3	0	947.7	7.7	1.3	465.9	474.9	150.6	625.5	42.8	279.4	322.2
June-Aug.	322.2	0	0	322.2	2.3	0.5	72.0	74.8	39.5	114.3	43.7	164.2	207.9
Mkt. year	216.4	731.3	0	947.7	10.0	1.8	537.9	549.7	190.1	739.8	43.7	164.2	207.9
1979/80													
Sept.-May	207.9	807.4	0	1,015.3	8.3	1.4	460.8	470.5	267.2	737.7	45.6	232.0	277.6
June-Aug.	277.6	0	0	277.6	2.1	0.6	34.6	37.3	62.4	99.7	45.6	132.3	177.9
Mkt. year	207.9	807.4	0	1,015.3	10.4	2.0	495.4	507.8	329.6	837.4	45.6	132.3	177.9
1980/81													
Sept.-May	177.9	579.3	0	757.2	7.2	1.4	352.6	361.2	211.5	572.7	43.8	140.7	184.5
June-Aug.	184.5	0	0	184.5	1.9	0.6	-29.9	-27.4	81.6	54.2	41.5	88.8	130.3
Mkt. year	177.9	579.3	0	757.2	9.1	2.0	322.7	333.8	293.1	626.9	41.5	88.8	130.3

Continued--

Table 4.--Sorghum: Marketing year supply and disappearance, specified periods, 1975/76-1986/87--continued

Year beginning September 1	Supply				Disappearance						Ending stocks		
					Domestic use				Exports	Total disappearance		Privately owned 1/	Total
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed	Feed and residual	Total			Govt. owned		
	Million bushels												
1981/82													
Sept.-May	130.3	875.8	0	1,006.1	6.8	1.4	413.5	421.7	204.9	626.6	38.3	341.2	379.5
June-Aug.	379.5	0	0	379.5	2.0	0.6	3.5	6.1	54.8	60.9	41.8	276.8	318.6
Mkt. year	130.3	875.8	0	1,006.1	8.8	2.0	417.0	427.8	259.7	687.5	41.8	276.8	318.6
1982/83													
Sept.-May	318.6	835.1	0	1,153.7	6.0	0.9	453.5	460.4	164.2	642.6	54.0	475.1	529.1
June-Aug.	529.1	0	0	529.1	1.9	0.9	41.3	44.1	45.9	90.0	171.5	267.6	439.1
Mkt. year	318.6	835.1	0	1,153.7	7.9	1.8	494.8	504.5	210.1	714.6	171.5	267.6	439.1
1983/84													
Sept.-May	439.1	487.5	0	926.6	5.7	1.0	356.6	363.3	194.4	557.7	78.0	290.9	368.9
June-Aug.	368.9	0	0.1	369.0	2.0	1.1	28.3	31.4	50.2	81.6	102.8	184.6	287.4
Mkt. year	439.1	487.5	0.1	926.7	7.7	2.1	384.9	394.7	244.6	639.3	102.8	184.6	287.4
1984/85													
Sept.-May	287.4	866.2	0.1	1,153.7	12.4	1.8	541.9	556.1	236.8	792.9	111.1	249.7	360.8
June-Aug.	360.8	0	0	360.8	2.9	0.7	-3.1	0.5	60.1	60.6	112.1	188.1	300.2
Mkt. year	287.4	866.2	0.1	1,153.7	15.3	2.5	538.8	556.6	296.9	853.5	112.1	188.1	300.2
1985/86													
Sept.-May	300.2	1,112.6	0	1,412.8	22.1	1.8	619.7	643.6	140.3	783.9	181.4	447.5	628.9
June-Aug.	628.9	0	0	628.9	3.9	0.7	35.6	40.2	37.7	77.9	207.0	344.0	551.0
Mkt. year	300.2	1,112.6	0	1,412.8	26.0	2.5	655.3	683.8	178.0	861.8	207.0	344.0	551.0
1986/87													
Sept.-May													
June-Aug.													
Mkt. year 2/	551.0	900.0	0	1,451.0	- 30.0 -		575.0	605.0	200.0	805.0	250.0	396.0	646.0

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected.

Table 5.--Barley: Marketing year supply and disappearance, area, and prices, 1975/76-1986/87 1/

Table 5.--Barley: Marketing year supply and disappearance, area, and prices, 1975/76-1986/87 1/

Year beginning June 1	Supply				Disappearance						Ending stocks May 31		
					Domestic use								
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 2/	Total
	Million bushels												
1975/76	92.0	379.2	15.7	486.9	130.5	15.7	188.5	334.7	23.8	358.5	---	128.4	128.4
1976/77	128.4	383.0	10.8	522.2	137.0	18.2	174.4	329.6	66.2	395.8	---	126.4	126.4
1977/78	126.4	427.8	9.4	563.6	138.6	16.7	178.0	333.3	57.2	390.5	---	173.1	173.1
1978/79	173.1	454.8	10.5	638.4	153.7	13.6	217.4	384.7	25.7	410.4	2.5	225.5	228.0
1979/80	228.0	383.2	11.8	623.0	157.9	14.0	204.2	376.1	54.8	430.9	3.2	188.9	192.1
1980/81	192.1	361.1	10.2	563.4	162.3	13.2	173.9	349.4	76.7	426.1	3.4	133.9	137.3
1981/82	137.3	473.5	9.6	620.4	158.0	16.3	198.2	372.5	100.1	472.6	3.3	144.5	147.8
1982/83	147.8	515.9	10.7	674.4	152.7	17.4	240.4	410.5	47.2	457.7	6.0	210.7	216.7
1983/84	216.7	508.9	7.1	732.7	149.5	19.9	282.4	451.8	91.5	543.3	11.9	177.5	189.4
1984/85	189.4	599.2	10.1	798.7	149.0	21.2	304.2	474.4	76.9	551.3	14.6	232.8	247.4
1985/86	247.4	591.4	9.0	847.8	147.2	19.6	334.6	501.4	21.8	523.2	57.4	267.2	324.6
1986/87 3/	324.6	599.8	5.0	929.4	- 174.4 -		300.0	474.4	100.0	574.4	30.0	325.0	355.0

1/ Quarterly supply and disappearance estimates discontinued because barley has been dropped from quarterly grain stocks survey.
2/ Includes quantity under loan and farmer-owned reserve. 3/ Projected.

Table 6.--Oats: Marketing year supply and disappearance, area, and prices, 1975/76-1986/87 1/

Year beginning June 1	Supply				Disappearance						Ending stocks May 31		
					Domestic use								
	Beginning stocks	Production	Imports	Total	Food and industrial	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 2/	Total
	Million bushels												
1975/76	224.0	639.0	0.7	863.7	44.0	42.7	558.5	645.2	13.7	658.9	24.9	179.9	204.8
1976/77	204.8	540.4	1.4	746.6	42.4	45.9	484.4	572.7	9.6	582.3	---	164.3	164.3
1977/78	164.3	752.8	2.2	919.3	42.0	42.5	509.4	593.9	12.3	606.2	---	313.1	313.1
1978/79	313.1	581.7	0.7	895.5	41.0	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80	280.0	526.7	0.9	807.6	40.7	34.6	491.8	567.1	4.1	571.2	2.7	233.7	236.4
1980/81	236.4	458.8	1.3	696.5	41.0	33.0	432.2	506.2	13.3	519.5	2.3	174.7	177.0
1981/82	177.0	509.5	1.6	688.1	41.2	35.4	453.0	529.6	6.6	536.2	0.7	151.2	151.9
1982/83	151.9	592.6	3.9	748.4	41.7	43.3	440.6	525.6	3.0	528.6	0.7	219.1	219.8
1983/84	219.8	477.0	30.1	726.9	40.9	36.6	466.2	543.7	2.1	545.8	1.5	179.6	181.1
1984/85	181.1	473.7	34.0	688.8	41.0	33.2	433.4	507.6	1.3	508.9	1.6	178.3	179.9
1985/86	179.9	520.8	27.5	728.2	44.0	39.0	459.8	542.8	2.2	545.0	1.9	181.3	183.2
1986/87 3/	183.2	383.6	30.0	596.8	- 85.4 -		400.4	485.8	2.0	487.8	2.0	107.0	109.0

1/ Quarterly supply and disappearance estimates discontinued because oats has been dropped from quarterly grain stocks survey.
2/ Includes quantity under loan and farmer-owned reserve. 3/ Projected.

Table 7.--Average prices received by farmers, United States, by months, and loan rate, 1970-86

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average 1/	Loan rate
Corn						Dollars per bushel								
1970	1.38	1.34	1.29	1.36	1.42	1.43	1.43	1.41	1.38	1.43	1.36	1.19	1.33	1.05
1971	1.11	1.00	.97	1.08	1.09	1.09	1.10	1.13	1.15	1.13	1.14	1.15	1.08	1.05
1972	1.22	1.19	1.20	1.42	1.39	1.35	1.37	1.42	1.61	1.99	2.03	2.68	1.57	1.05
1973	2.15	2.17	2.18	2.39	2.59	2.76	2.68	2.41	2.45	2.57	2.91	3.37	2.55	1.05
1974	3.30	3.45	3.32	3.27	3.07	2.86	2.67	2.68	2.66	2.68	2.72	2.95	3.02	1.10
1975	2.76	2.62	2.33	2.37	2.44	2.48	2.50	2.46	2.61	2.74	2.82	2.64	2.54	1.10
1976	2.60	2.33	2.02	2.24	2.34	2.34	2.35	2.31	2.25	2.12	1.88	1.63	2.15	1.50
1977	1.60	1.67	1.88	1.97	2.00	2.03	2.15	2.24	2.29	2.28	2.16	2.01	2.02	2.00
1978	1.98	1.97	2.02	2.09	2.11	2.18	2.22	2.27	2.35	2.49	2.64	2.54	2.25	2.00
1979	2.51	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	2.52	2.10
1980	3.01	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	3.11	2.25
1981	2.55	2.45	2.34	2.39	2.54	2.44	2.46	2.55	2.60	2.57	2.50	2.30	2.50	2.40
1982	2.15	1.98	2.13	2.26	2.36	2.56	2.71	2.95	3.03	3.04	3.13	3.35	2.68	2.55
1983	3.32	3.15	3.17	3.15	3.15	3.11	3.21	3.32	3.34	3.36	3.30	3.12	3.25	2.65
1984	2.90	2.65	2.55	2.56	2.64	2.62	2.67	2.70	2.68	2.64	2.60	2.44	2.62	2.55
1985	2.29	2.11	2.21	2.29	2.33	2.32	2.29	2.29	2.39	2.32	2.00	1.73	2.35	2.55
1986	1.44	*1.31												
Sorghum						Dollars per cwt								
1970	2.07	2.02	2.02	2.04	2.10	2.16	2.17	2.19	2.33	2.43	2.37	2.27	2.04	1.61
1971	2.01	1.76	1.78	1.86	1.89	1.86	1.87	1.87	1.88	1.90	1.98	2.05	1.86	1.73
1972	2.11	2.09	2.19	2.72	2.72	2.60	2.60	2.56	2.66	3.10	3.46	3.64	2.45	1.79
1973	3.87	3.65	3.66	3.83	4.03	4.38	4.25	3.78	3.59	3.59	4.15	5.07	3.82	1.79
1974	5.30	5.78	5.85	5.33	4.96	4.21	4.03	4.15	4.21	4.15	4.25	4.69	4.95	1.88
1975	4.56	4.43	4.05	4.00	4.06	4.09	4.14	4.14	4.14	4.29	4.53	4.03	4.23	1.88
1976	4.20	3.68	3.30	3.51	3.59	3.51	3.55	3.44	3.20	3.12	2.84	2.63	3.62	2.55
1977	2.52	2.80	3.03	3.05	3.15	3.20	3.39	3.62	3.66	3.64	3.50	3.37	3.25	3.39
1978	3.22	3.35	3.45	3.58	3.54	3.55	3.54	3.58	3.66	4.30	4.46	4.27	3.59	3.39
1979	4.24	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	4.20	3.57
1980	5.12	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	5.25	3.82
1981	4.07	3.90	3.87	3.95	4.09	4.08	4.00	4.10	4.35	4.17	3.96	3.95	4.25	4.07
1982	3.80	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.05	5.03	5.29	4.50	4.32
1983	5.26	5.01	4.98	4.93	4.92	4.74	4.85	5.00	5.08	4.94	4.64	4.58	5.07	4.50
1984	4.24	4.05	4.05	4.15	4.16	4.10	4.24	4.46	4.54	4.52	4.04	3.84	4.27	4.32
1985	3.27	3.30	3.47	3.76	3.68	3.55	3.67	3.80	3.98	3.39	3.00	2.65	3.84	4.32
1986	2.36	*2.36												

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average 1/	Loan rate
Oats						Dollars per bushel								
1970	.61	.58	.57	.61	.61	.63	.65	.67	.68	.66	.63	.66	.62	.63
1971	.72	.63	.56	.57	.58	.60	.62	.64	.64	.64	.64	.64	.60	.54
1972	.67	.66	.62	.64	.67	.70	.81	.81	.78	.77	.77	.80	.72	.54
1973	.90	.86	1.13	1.09	1.14	1.13	1.20	1.32	1.44	1.40	1.24	1.27	1.18	.54
1974	1.30	1.37	1.55	1.57	1.68	1.70	1.70	1.62	1.58	1.46	1.51	1.54	1.53	.54
1975	1.49	1.45	1.44	1.45	1.41	1.40	1.42	1.44	1.46	1.46	1.44	1.47	1.46	.54
1976	1.64	1.64	1.48	1.49	1.46	1.45	1.51	1.58	1.63	1.64	1.64	1.52	1.56	.72
1977	1.29	1.02	.93	.94	1.04	1.10	1.13	1.18	1.22	1.17	1.19	1.24	1.09	1.03
1978	1.16	1.08	1.06	1.06	1.08	1.15	1.19	1.22	1.25	1.27	1.29	1.29	1.20	1.03
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36	1.08
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79	1.16
1981	1.99	1.84	1.72	1.74	1.78	1.88	1.94	1.97	1.99	2.02	1.99	1.99	1.89	1.24
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.46	1.48	1.49	1.54	1.54	1.49	1.31
1983	1.51	1.46	1.45	1.55	1.62	1.67	1.73	1.81	1.88	1.81	1.82	1.84	1.67	1.36
1984	1.80	1.68	1.62	1.60	1.69	1.64	1.72	1.74	1.69	1.68	1.68	1.60	1.69	1.31
1985	1.59	1.31	1.16	1.10	1.08	1.14	1.20	1.18	1.16	1.14	1.14	1.21	1.25	1.31
1986	1.10	.90	.86	.99	1.04									

Continued -

Table 7.--Average prices received by farmers, United States, by months, and loan rate, 1970-86--continued

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average 1/	Loan rate
						Dollars per bushel								
All barley														
1970	.94	.90	.85	.91	.93	.96	1.02	1.02	1.03	1.02	1.03	1.12	.97	.83
1971	1.15	1.07	.87	.92	.96	1.02	1.04	1.04	1.01	.98	.99	1.04	.99	.86
1972	1.09	1.04	.96	1.07	1.17	1.21	1.32	1.42	1.34	1.31	1.31	1.39	1.21	.86
1973	1.55	1.58	2.10	2.16	2.23	2.10	2.19	2.32	2.52	2.61	2.15	2.19	2.14	.86
1974	2.25	2.35	2.78	2.86	3.11	3.41	3.30	3.17	2.89	2.55	2.72	2.75	2.81	.90
1975	2.30	2.35	2.56	2.69	2.68	2.43	2.35	2.31	2.31	2.34	2.31	2.41	2.42	.90
1976	2.60	2.51	2.35	2.33	2.22	2.11	2.08	2.19	2.19	2.25	2.22	2.12	2.25	1.22
1977	1.93	1.53	1.53	1.69	1.63	1.82	1.79	1.90	1.98	1.90	1.93	2.15	1.78	1.63
1978	2.04	1.83	1.86	1.85	1.90	1.93	1.90	1.95	1.87	1.89	1.96	2.07	1.92	1.63
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29	1.71
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.84	1.83
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	2.50	2.40	2.40	2.42	2.53	2.44	1.95
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.09	2.22	2.36	2.22	2.08
1983	2.32	2.20	2.34	2.46	2.53	2.55	2.55	2.55	2.47	2.50	2.54	2.78	2.50	2.16
1984	2.61	2.54	2.26	2.25	2.29	2.25	2.19	2.24	2.21	2.18	2.16	2.23	2.26	2.08
1985	2.14	2.08	1.98	1.88	1.96	2.03	2.07	2.04	1.95	1.88	1.85	1.74	2.00	2.08
1986	1.57	1.67	1.51	1.45	*1.53									

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Feed barley												
1979	2.38	2.22	2.21	2.29	2.20	2.18	2.23	2.14	2.24	2.16	2.09	2.21
1980	2.38	2.43	2.46	2.56	2.70	2.75	2.96	3.09	2.98	2.99	2.90	3.01
1981	2.98	2.36	2.23	2.32	2.30	2.29	2.29	2.41	2.28	2.29	2.35	2.58
1982	2.52	2.23	1.98	1.91	1.87	1.94	1.98	2.07	1.99	2.08	2.26	2.43
1983	2.52	2.31	2.23	2.41	2.45	2.51	2.52	2.58	2.47	2.54	2.55	2.86
1984	2.72	2.60	2.10	2.13	2.19	2.19	2.20	2.22	2.27	2.19	2.16	2.31
1985	2.26	2.05	1.75	1.74	1.85	1.89	2.02	1.99	1.90	1.83	1.84	2.00
1986	1.60	1.45	1.21	1.32	*1.44							
Malting barley												
1979	2.18	2.22	2.24	2.40	2.44	2.53	2.39	2.30	2.23	2.20	2.19	2.21
1980	2.34	2.61	2.72	2.81	2.97	3.04	2.99	3.08	3.11	3.10	3.14	2.99
1981	2.86	2.48	2.58	2.66	2.49	2.68	2.63	2.70	2.55	2.50	2.48	2.42
1982	2.26	2.10	2.38	2.58	2.22	2.26	2.39	2.32	2.00	2.09	2.13	2.18
1983	2.05	2.06	2.50	2.69	2.72	2.61	2.61	2.50	2.47	2.46	2.54	2.53
1984	2.52	2.48	2.50	2.52	2.52	2.39	2.18	2.29	2.11	2.17	2.17	2.10
1985	2.02	2.13	2.49	2.33	2.23	2.28	2.18	2.13	1.99	1.93	1.85	1.73
1986	1.51	2.07	2.22	1.85	*1.73							

1/ U.S. season average prices weighed by marketings. *Preliminary.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

Table 8.--Cash prices at principal markets, 1971-86

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
						Dollars per bushel							
Corn, no. 2 yellow; Gulf Ports, export prices													
1971	1.26	1.17	1.24	1.32	1.30	1.31	1.33	1.36	1.38	1.34	1.37	1.41	1.32
1972	1.50	1.45	1.50	1.70	2.01	2.06	2.03	1.95	2.20	2.58	2.78	3.11	2.07
1973	2.72	2.70	2.74	2.87	3.11	3.33	3.21	2.90	2.89	2.96	3.36	3.70	3.04
1974	3.59	3.86	3.68	3.69	3.34	3.06	3.05	3.03	2.90	3.02	3.03	3.29	3.30
1975	3.11	2.98	2.80	2.77	2.80	2.88	2.87	2.82	3.00	3.09	3.08	2.95	2.93
1976	2.92	2.70	2.51	2.63	2.83	2.81	2.73	2.68	2.56	2.40	2.16	1.95	2.57
1977	1.99	2.11	2.37	2.44	2.42	2.57	2.64	2.83	2.86	2.70	2.45	2.34	2.48
1978	2.31	2.44	2.54	2.49	2.66	2.72	2.77	2.83	2.85	3.05	3.33	3.02	2.75
1979	3.00	3.03	2.96	2.94	2.68	2.89	2.80	2.74	2.81	2.89	3.33	3.64	2.98
1980	3.58	3.57	3.72	3.73	3.78	3.64	3.61	3.69	3.58	3.46	3.51	3.23	3.59
1981	2.93	2.84	2.83	2.74	2.92	2.87	2.92	3.00	3.00	2.94	2.82	2.58	2.87
1982	2.55	2.33	2.62	2.68	2.74	2.98	3.18	3.39	3.40	3.43	3.57	3.88	3.06
1983	3.75	3.76	3.74	3.64	3.60	3.48	3.74	3.76	3.71	3.73	3.62	3.52	3.67
1984	3.31	3.08	2.98	2.90	3.03	3.04	3.05	3.05	2.96	2.95	2.92	2.67	3.00
1985	2.59	2.50	2.69	2.75	2.72	2.63	2.56	2.57	2.68	2.63	2.12	1.85	2.52
1986	1.68	1.66											
Corn, no. 2 yellow, St. Louis													
1971	1.06	1.01	1.07	1.17	1.16	1.17	1.17	1.21	1.24	1.22	1.25	1.26	1.17
1972	1.35	1.26	1.32	1.55	1.60	1.71	1.57	1.62	1.95	2.36	2.46	2.76	1.79
1973	2.29	2.28	2.40	2.63	2.84	3.03	2.91	2.64	2.63	2.82	3.29	3.52	2.77
1974	3.49	3.60	3.45	3.44	3.16	2.93	2.87	2.89	2.76	2.86	2.90	3.10	3.12
1975	2.90	2.62	2.53	2.56	2.60	2.66	2.69	2.66	2.81	2.90	2.91	2.78	2.72
1976	2.69	2.41	2.27	2.44	2.51	2.48	2.48	2.46	2.37	2.22	1.99	1.72	2.34
1977	1.66	1.75	2.14	2.23	2.30	2.24	2.38	2.46	2.49	2.45	2.27	2.12	2.21
1978	2.05	2.13	2.25	2.30	2.33	2.41	2.47	2.53	2.60	2.77	2.95	2.73	2.46
1979	2.68	2.59	2.51	2.66	2.50	2.64	2.54	2.53	2.60	2.66	3.01	3.31	2.68
1980	3.26	3.35	3.53	3.59	3.60	3.47	3.42	3.49	3.42	3.33	3.34	3.03	3.40
1981	2.61	2.53	2.59	2.54	2.65	2.61	2.66	2.78	2.78	2.75	2.68	2.42	2.63
1982	2.32	2.12	2.43	2.49	2.52	2.79	2.99	3.24	3.24	3.27	3.39	3.68	2.87
1983	3.60	3.50	3.53	3.45	3.41	3.31	3.55	3.61	3.58	3.57	3.43	3.33	3.49
1984	3.09	2.84	2.77	2.75	2.86	2.84	2.86	2.88	2.81	2.79	2.72	2.47	2.81
1985	2.38	2.27	2.50	2.59	2.55	2.50	2.42	2.46	2.56	2.52	2.01	1.67	2.37
1986	1.47	1.46											
Corn, no. 2 yellow, Omaha													
1971	1.15	1.14	1.15	1.24	1.25	1.23	1.23	1.25	1.27	1.23	1.24	1.21	1.22
1972	1.28	1.28	1.34	1.49	1.50	1.55	1.49	1.51	1.84	2.25	2.32	2.71	1.71
1973	2.37	2.34	2.40	2.49	2.71	2.95	2.76	2.49	2.51	2.68	3.19	3.55	2.70
1974	3.46	3.63	3.46	3.36	3.07	2.79	2.75	2.85	2.81	2.84	2.92	3.12	3.09
1975	2.95	2.75	2.55	2.56	2.57	2.60	2.62	2.59	2.74	2.86	2.83	2.69	2.69
1976	2.59	2.36	2.17	2.30	2.38	2.38	2.35	2.29	2.21	2.10	1.90	1.66	2.22
1977	1.67	1.79	2.02	2.04	2.02	2.03	2.14	2.25	2.34	2.33	2.13	1.98	2.06
1978	1.95	2.05	2.04	2.09	2.12	2.13	2.17	2.26	2.40	2.59	2.68	2.45	2.24
1979	2.37	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	2.44
1980	3.01	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	3.17
1981	2.51	2.44	2.39	2.37	2.47	2.45	2.48	2.61	2.65	2.65	2.54	2.23	2.48
1982	2.23	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	3.11	3.18	3.39	2.73
1983	3.32	3.23	3.24	3.17	3.11	3.03	3.25	3.33	3.35	3.37	3.22	3.11	3.23
1984	2.94	2.71	2.61	2.55	2.60	2.61	2.68	2.73	2.68	2.70	2.61	2.39	2.65
1985	2.35	2.26	2.28	2.36	2.33	2.31	2.31	2.34	2.43	2.42	2.01	1.61	2.25
1986	1.41	1.40											

Continued--

Table 8.--Cash prices at principal markets, 1971-86--continued

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
						Dollars per bushel							
Corn, no. 2 yellow, Chicago													
1971	1.16	1.10	1.07	1.22	1.21	1.21	1.22	1.26	1.28	1.25	1.29	1.29	1.21
1972	1.40	1.32	1.33	1.57	1.58	1.59	1.59	1.65	2.01	2.42	2.52	2.91	1.82
1973	2.47	2.37	2.50	2.68	2.90	3.13	2.99	2.69	2.70	2.93	3.35	3.63	2.94
1974	3.55	3.74	3.48	3.47	3.19	2.96	2.90	2.96	2.82	2.89	2.95	3.12	3.17
1975	2.99	2.74	2.58	2.59	2.62	2.70	2.68	2.68	2.84	2.96	2.96	2.84	2.77
1976	2.77	2.49	2.33	2.44	2.53	2.54	2.52	2.50	2.41	2.27	2.05	1.78	2.38
1977	1.80	1.84	2.14	2.19	2.19	2.21	2.36	2.51	2.57	2.51	2.28	2.17	2.23
1978	2.13	2.22	2.28	2.27	2.29	2.35	2.42	2.53	2.66	2.83	3.00	2.83	2.49
1979	2.78	2.73	2.59	2.69	2.54	2.65	2.60	2.61	2.70	2.70	3.08	3.36	2.75
1980	3.44	3.43	3.43	3.54	3.56	3.49	3.48	3.53	3.47	3.41	3.41	3.09	3.44
1981	2.72	2.61	2.60	2.52	2.63	2.63	2.67	2.69	2.73	2.72	2.61	2.36	2.63
1982	2.17	2.07	2.38	2.44	2.54	2.74	2.98	3.12	3.11	3.28	3.33	3.60	2.98
1983	3.52	3.47	3.51	3.38	3.30	3.29	3.52	3.61	3.61	3.62	3.45	3.23	3.46
1984	2.95	2.81	2.79	2.72	2.79	2.79	2.84	2.90	2.85	2.83	2.76	2.50	2.79
1985	2.31	2.26	2.46	2.50	2.51	2.49	2.45	2.46	2.55	2.52	1.98	1.68	2.35
1986	1.49	1.51											
						Dollars per cwt							
Grain sorghum, no. 2 yellow; Gulf Ports, export prices													
1971	2.19	2.18	2.29	2.43	2.41	2.42	2.43	2.44	2.34	2.26	2.36	2.47	2.35
1972	2.64	2.58	2.76	3.32	3.69	3.56	3.46	3.38	3.56	3.96	4.52	5.14	3.55
1973	4.78	4.96	4.84	4.96	5.25	5.50	5.15	4.68	4.35	4.25	5.26	5.80	4.98
1974	5.84	6.77	6.63	6.35	5.39	4.95	5.04	5.06	5.02	4.80	4.69	5.55	5.51
1975	5.36	5.24	4.94	4.91	4.92	4.99	5.01	4.89	4.89	4.97	5.13	4.60	4.99
1976	4.80	4.45	4.24	4.37	4.52	4.52	4.43	4.25	4.16	3.82	3.64	3.43	4.22
1977	3.49	3.68	4.08	4.08	4.00	4.08	4.34	4.59	4.62	4.40	4.11	3.98	4.12
1978	3.95	4.26	4.38	4.34	4.40	4.44	4.46	4.46	4.56	4.96	5.40	5.05	4.55
1979	5.11	5.27	5.28	5.36	5.10	5.39	5.20	5.19	5.29	5.42	6.03	6.49	5.43
1980	6.43	6.48	6.79	6.71	6.65	6.46	6.40	6.38	6.34	5.76	5.60	5.29	6.27
1981	5.00	4.91	5.10	5.08	5.27	5.14	5.11	5.21	5.30	5.01	4.66	4.54	5.03
1982	4.36	4.44	5.00	5.06	5.20	5.49	5.64	5.98	6.05	5.78	5.68	6.18	5.41
1983	6.15	5.99	6.01	5.94	5.87	5.70	5.93	5.88	5.98	5.84	5.05	4.86	5.77
1984	4.75	4.60	4.84	5.04	5.19	5.10	5.32	5.36	5.23	4.78	4.49	4.04	4.90
1985	3.70	3.97	4.34	4.52	4.45	4.30	4.28	4.50	4.80	3.90	3.37	2.71	4.07
1986	2.95	3.15											
Sorghum, no. 2 yellow, Kansas City													
1971	1.91	1.80	1.91	2.06	2.06	2.07	2.07	2.09	2.08	2.06	2.11	2.05	2.02
1972	2.21	2.17	2.42	2.88	3.06	2.88	2.86	2.83	3.09	3.61	3.93	4.72	3.06
1973	4.37	4.37	4.31	4.37	4.71	4.99	4.64	4.03	3.84	3.99	5.02	5.79	4.53
1974	5.64	6.32	6.10	5.70	4.95	4.55	4.48	4.64	4.60	4.53	4.82	5.13	5.12
1975	4.66	4.53	4.36	4.33	4.36	4.47	4.62	4.47	4.47	4.66	4.73	4.29	4.50
1976	4.27	3.88	3.60	3.77	3.91	3.85	3.75	3.62	3.53	3.28	3.15	2.73	3.61
1977	2.78	3.05	3.40	3.36	3.37	3.49	3.78	3.92	3.92	3.82	3.54	3.41	3.49
1978	3.43	3.61	3.67	3.64	3.71	3.73	3.77	3.81	3.92	4.41	4.89	4.44	3.92
1979	4.34	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	4.54
1980	5.61	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	5.48
1981	4.16	4.14	4.14	4.27	4.44	4.26	4.28	4.45	4.48	4.50	4.38	4.02	4.29
1982	4.06	3.85	4.25	4.37	4.37	4.54	5.08	5.30	5.37	5.37	5.32	5.69	4.80
1983	5.55	5.37	5.25	5.16	5.09	5.03	5.40	5.36	5.39	5.40	4.95	4.74	5.22
1984	4.46	4.25	4.28	4.32	4.48	4.33	4.58	4.76	4.74	4.74	4.50	4.06	4.46
1985	3.56	3.62	3.75	3.97	3.95	3.80	3.82	4.00	4.25	4.00	3.20	2.71	3.72
1986	2.47	2.60											

Continued--

Table 8.--Cash prices at principal markets, 1971-86--continued

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
						Dollars per cwt							
Sorghum, no. 2 yellow, Texas High Plains													
1971	N.Q.	1.99	1.99	2.08	2.12	2.08	2.08	2.11	2.13	2.14	2.18	2.21	2.10
1972	2.28	2.26	2.48	2.98	3.03	2.98	3.01	2.96	3.20	3.69	3.77	5.21	3.15
1973	4.50	4.44	4.40	4.43	4.75	5.22	4.89	4.42	4.22	4.08	4.91	5.80	4.67
1974	5.74	6.26	6.12	5.82	5.00	4.52	4.41	4.70	4.64	4.63	4.67	5.23	5.14
1975	5.03	4.56	4.32	4.32	4.29	4.38	4.47	4.48	4.49	4.63	5.01	4.40	4.53
1976	4.33	3.97	3.73	3.79	3.86	3.86	3.86	3.77	3.67	3.50	3.46	3.10	3.74
1977	3.13	3.38	3.58	3.63	3.62	3.67	4.04	4.28	4.25	4.27	4.12	3.93	3.82
1978	3.85	4.06	4.13	4.08	4.04	4.05	4.01	4.06	4.21	4.83	5.39	4.97	4.31
1979	4.92	4.83	4.76	4.75	4.49	4.56	4.46	4.48	4.78	4.99	5.71	5.89	4.88
1980	5.95	6.27	6.62	6.42	6.26	5.93	5.79	5.88	5.90	5.83	5.80	5.02	5.97
1981	4.65	4.70	4.71	4.63	4.77	4.78	4.75	4.91	5.26	5.28	5.24	4.80	4.87
1982	4.39	4.08	4.38	4.65	4.82	5.19	5.52	5.94	5.76	5.81	5.86	5.85	5.19
1983	5.77	5.56	5.49	5.43	5.35	5.14	5.33	5.68	5.67	5.77	5.72	5.46	5.53
1984	5.22	4.95	4.86	4.90	4.84	4.86	4.98	5.14	5.22	5.25	5.24	N.Q.	5.04
1985	4.19	4.38	4.30	4.49	4.47	4.36	4.33	4.48	4.77	4.84	3.93	3.36	4.32
1986	3.35	3.24											

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Average
						Dollars per bushel							
Barley, no. 3 or better malting, 65% or better plump, Minneapolis,													
1971	1.30	1.25	1.10	1.11	1.17	1.17	1.17	1.20	1.19	1.19	1.19	1.20	1.19
1972	1.22	1.22	1.21	1.26	1.34	1.34	1.45	1.59	1.58	1.61	1.64	1.66	1.43
1973	1.74	1.82	2.45	2.64	2.64	2.62	2.64	2.76	3.27	3.57	2.98	2.94	2.67
1974	3.11	3.38	3.77	4.00	4.42	4.78	4.65	4.62	4.45	4.15	4.34	4.28	4.16
1975	3.97	3.83	3.65	3.93	3.83	3.56	3.35	3.24	3.21	3.22	3.17	3.22	3.52
1976	3.55	3.59	3.37	3.24	3.21	3.00	2.95	3.00	2.91	2.98	2.91	2.83	3.13
1977	2.38	2.02	1.92	2.15	2.25	2.36	2.32	2.26	2.33	2.32	2.44	2.51	2.27
1978	2.39	2.13	2.19	2.27	2.26	2.47	2.40	2.30	2.33	2.46	2.59	2.73	2.38
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	3.00	3.14	2.99	2.98	3.05	3.06
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	2.38	2.42	2.45	2.68	2.76	2.53
1983	2.60	2.54	2.76	2.90	2.96	2.95	2.77	2.85	2.76	2.91	3.04	3.06	2.84
1984	3.04	2.86	2.48	2.44	2.43	2.43	2.36	2.46	2.47	2.51	2.52	2.55	2.55
1985	2.46	2.25	2.03	2.15	2.10	2.27	2.29	2.28	2.20	2.34	2.40	2.07	2.24
1986	1.84	1.75	1.61	1.76	1.93								
Barley, no. 2 feed, Minneapolis 1/													
1971	1.08	1.00	.95	.99	1.04	1.04	1.04	1.07	1.07	1.05	1.06	1.08	1.04
1972	1.05	.96	.98	1.11	1.16	1.14	1.27	1.34	1.20	1.19	1.25	1.36	1.17
1973	1.51	1.67	2.12	2.12	2.02	1.80	2.12	2.34	2.51	2.32	1.74	2.10	2.03
1974	2.36	2.36	2.69	2.48	3.07	3.17	2.89	2.82	2.59	2.26	2.24	2.05	2.58
1975	1.67	2.04	2.77	3.00	2.83	2.42	2.23	2.11	2.26	2.38	2.39	2.50	2.38
1976	2.62	2.45	2.48	2.68	2.46	2.21	2.05	2.20	2.35	2.29	2.28	2.13	2.35
1977	1.76	1.63	1.50	1.58	1.66	1.65	1.65	1.65	1.65	1.66	1.91	1.90	1.68
1978	1.84	1.71	1.68	1.77	1.81	1.88	1.79	1.71	1.69	1.86	1.89	1.96	1.80
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	2.20	2.27	2.16	2.16	2.24	2.21
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	1.63	1.72	1.73	2.01	1.95	1.76
1983	1.96	1.95	2.42	2.61	2.60	2.53	2.39	2.55	2.56	2.65	2.74	2.77	2.48
1984	2.59	2.18	2.13	2.05	2.10	2.06	1.88	1.98	1.99	1.97	2.05	2.05	2.09
1985	1.90	1.66	1.46	1.40	1.41	1.49	1.60	1.57	---	---	---	1.31	1.53
1986	1.23	1.16	1.13	1.27	1.50								

Continued--

Table 8.--Cash prices at principal markets, 1971-86--continued

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
						Dollars per bushel							
Barley, no. 2 Western, Portland													
1971	1.30	1.12	.99	1.04	1.06	1.17	1.20	1.20	1.23	1.24	1.22	1.22	1.17
1972	1.16	1.22	1.34	1.41	1.52	1.58	1.66	1.91	1.83	1.79	1.73	1.84	1.58
1973	2.01	2.31	2.58	2.61	2.63	2.70	2.63	2.85	2.93	2.93	2.36	2.39	2.58
1974	2.51	2.79	3.14	3.23	3.41	3.68	3.56	3.18	2.82	2.47	2.75	2.68	3.02
1975	2.47	2.04	2.77	3.01	2.82	2.46	2.38	2.45	2.56	2.56	2.44	2.50	2.54
1976	2.65	2.70	2.55	2.61	2.49	2.28	2.28	2.50	2.63	2.34	2.36	2.41	2.48
1977	2.19	2.10	1.96	2.00	1.97	2.04	2.13	2.19	2.20	2.24	2.39	2.41	2.15
1978	2.41	2.24	2.22	2.02	1.94	1.97	2.05	2.08	1.98	2.04	2.09	2.14	2.10
1979	2.47	2.89	2.76	2.75	2.69	2.57	2.67	2.68	2.79	2.67	2.63	2.71	2.69
1980	2.78	3.03	2.88	2.93	3.34	3.56	3.63	3.68	3.71	3.58	3.48	3.50	3.34
1981	3.21	2.83	2.76	2.73	2.67	2.73	2.73	2.97	2.94	2.91	2.99	3.01	2.87
1982	2.82	2.54	2.56	2.46	2.22	2.49	2.40	2.45	2.44	2.49	2.61	2.73	2.52
1983	2.60	2.48	2.70	2.91	2.98	3.02	3.00	3.13	2.90	2.91	3.13	3.17	2.91
1984	3.05	2.59	2.57	2.53	2.58	2.62	2.65	2.58	2.56	2.49	2.46	2.44	2.59
1985	2.37	2.15	2.13	2.06	2.17	2.31	2.47	2.37	2.16	2.15	2.17	2.16	2.22
1986	1.98	1.79	1.75	1.73	1.97								
Oats, no. 2 Heavy White, Toledo													
1971	.85	.75	.71	.72	.76	.81	.83	.81	.82	.80	.77	.81	.79
1972	.82	.82	.86	.88	.89	.88	1.09	1.00	1.01	.92	.98	1.02	.93
1973	1.01	1.04	1.23	1.27	1.31	1.32	1.49	1.63	1.75	1.67	1.48	1.46	1.39
1974	1.50	1.59	1.74	1.72	1.85	1.88	1.88	1.75	1.72	1.60	1.67	1.64	1.71
1975	1.61	1.52	1.47	1.41	1.35	1.48	1.49	1.53	1.58	1.56	1.52	1.54	1.50
1976	1.73	1.58	1.51	1.54	1.57	1.65	1.77	1.83	1.91	1.85	1.80	1.81	1.71
1977	1.61	1.33	1.19	1.15	1.17	1.40	1.53	1.53	1.50	1.43	1.47	1.51	1.40
1978	1.49	1.29	1.27	1.24	1.29	1.39	1.39	1.42	1.44	1.39	1.38	1.45	1.37
1979	1.59	1.60	1.47	1.44	1.45	1.56	1.64	1.64	1.64	1.65	1.70	1.80	1.60
1980	1.89	1.79	1.78	1.85	2.00	2.22	2.39	2.51	2.49	2.39	2.36	2.39	2.17
1981	2.40	2.03	1.98	1.97	2.14	2.31	2.25	2.32	2.37	2.35	2.31	2.33	2.23
1982	2.17	1.61	1.39	1.34	1.37	1.49	1.58	1.58	1.54	1.52	1.52	1.53	1.55
1983	1.56	1.54	1.77	1.98	2.12	2.21	2.24	2.25	2.07	2.12	2.16	2.08	2.01
1984	2.06	2.06	2.00	1.95	1.92	1.96	1.94	1.96	1.96	1.88	1.75	1.60	1.92
1985	1.54	1.33	1.04	.96	.91	1.01	1.09	1.08	1.10	1.08	.95	.92	1.08
1986	.81	.82	.83	.81	.93								
Oats, no. 2 Heavy White, Minneapolis													
1971	.70	.63	.61	.64	.64	.66	.68	.69	.69	.66	.67	.70	.66
1972	.70	.69	.70	.71	.76	.81	.91	.88	.84	.84	.86	.91	.80
1973	.93	.93	1.28	1.32	1.26	1.25	1.32	1.55	1.66	1.52	1.26	1.35	1.30
1974	1.43	1.63	1.68	1.71	1.87	1.80	1.74	1.64	1.64	1.49	1.72	1.78	1.68
1975	1.59	1.59	1.70	1.68	1.64	1.69	1.65	1.67	1.66	1.64	1.67	1.72	1.66
1976	1.93	1.84	1.67	1.67	1.66	1.62	1.67	1.78	1.80	1.76	1.81	1.68	1.74
1977	1.38	1.15	1.02	1.11	1.17	1.34	1.32	1.32	1.32	1.33	1.40	1.43	1.27
1978	1.36	1.24	1.28	1.36	1.39	1.47	1.40	1.47	1.54	1.60	1.48	1.55	1.43
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	2.23	2.26	2.16	2.21	2.16	2.14
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	1.67	1.63	1.63	1.73	1.71	1.69
1983	1.67	1.60	1.79	1.94	2.00	1.97	1.94	1.98	1.82	1.88	1.89	1.96	1.87
1984	1.92	1.84	1.77	1.79	1.84	1.92	1.87	1.81	1.82	1.79	1.73	1.65	1.81
1985	1.59	1.44	1.23	1.24	1.19	1.32	1.39	1.37	1.30	1.27	1.16	1.22	1.31
1986	1.18	1.05	1.12	1.29	1.39								

N.Q.=No quotes. 1/ Prior to June 1977 reported as barley, no. 3 or better.

Source: Grain and Feed Market News, AMS, USDA.

Table 9.--Feed-price ratios for livestock, poultry, and milk, by months, 1971-86

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
HOG/CORN, U.S. basis 1/													
1971	16.1	19.5	19.3	18.2	20.9	23.5	21.2	19.9	21.7	22.7	24.1	24.3	21.0
1972	23.0	23.0	22.3	20.8	22.3	25.4	27.9	24.7	21.9	18.7	20.3	21.0	22.6
1973	20.4	18.8	18.6	16.0	15.5	14.2	13.1	12.7	10.7	9.4	11.8	10.7	14.3
1974	10.2	10.8	11.1	11.7	12.4	13.5	14.5	14.7	17.0	17.7	19.8	19.0	14.4
1975	21.2	22.3	21.1	20.1	19.5	19.4	18.2	19.1	18.2	18.0	16.9	16.1	19.2
1976	15.3	14.1	15.4	16.3	16.3	16.8	15.8	15.6	18.1	19.8	23.8	26.3	17.8
1977	25.2	23.9	20.1	21.3	22.0	23.3	21.6	20.1	20.9	20.9	21.0	23.6	22.0
1978	24.2	25.8	23.4	23.0	24.0	24.1	21.8	19.4	18.4	15.9	14.4	14.3	20.7
1979	14.8	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	14.3
1980	15.3	15.8	14.7	13.7	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	14.1
1981	19.1	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.1	26.6	20.2
1982	28.5	28.2	24.6	23.7	23.4	21.9	18.6	15.9	15.1	14.4	13.9	13.9	20.2
1983	13.3	12.8	11.8	14.0	15.4	14.6	14.3	14.3	14.1	14.6	15.8	16.2	14.3
1984	16.0	16.5	18.4	19.0	18.2	18.4	16.3	15.3	15.4	16.9	17.6	17.4	17.1
1985	17.3	20.4	19.5	19.8	19.0	18.4	17.6	17.3	*	*	29.5	*	19.9
1986 2/	*	40.8											
BEEF-STEER/CORN, Omaha 3/													
1971	28.3	28.3	29.0	27.6	28.5	29.5	28.6	27.6	28.1	30.8	31.0	29.5	28.9
1972	27.1	27.3	25.1	24.7	27.1	28.1	30.6	29.8	24.9	20.8	20.5	19.5	25.5
1973	19.0	17.9	16.7	15.8	17.4	15.7	15.5	16.7	16.1	14.2	13.7	13.1	16.0
1974	12.0	10.9	10.9	11.1	11.8	12.5	13.1	15.0	17.6	18.2	17.2	15.0	13.8
1975	16.6	17.4	17.7	17.6	16.0	14.9	13.8	16.6	14.8	14.2	13.4	13.8	15.6
1976	14.3	16.1	18.0	17.4	16.1	16.0	15.9	17.5	19.0	19.2	21.5	24.2	17.9
1977	24.2	23.6	20.7	21.1	21.6	22.2	22.7	23.3	24.5	23.8	25.6	26.5	23.3
1978	27.8	26.8	26.4	26.6	28.5	30.5	32.7	33.2	30.8	26.5	25.0	25.6	28.4
1979	28.6	27.8	28.9	29.1	29.4	29.0	30.0	27.2	26.6	26.6	25.1	24.3	27.7
1980	23.1	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	20.7
1981	26.0	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	26.1
1982	27.5	27.7	25.1	25.2	24.5	23.4	22.7	21.9	21.8	21.2	19.6	18.1	23.2
1983	17.8	18.4	18.3	19.8	21.6	22.1	21.1	20.4	19.7	19.1	20.4	20.7	20.0
1984	21.3	22.4	24.6	25.6	24.8	24.1	22.2	21.5	21.5	21.0	20.4	21.7	22.6
1985	21.8	25.7	27.8	26.7	25.6	24.4	24.0	22.9	23.0	22.3	28.9	36.7	25.8
1986 2/	42.1	42.7											
MILK/FEED, U.S. basis 4/													
1971	1.76	1.84	1.88	1.85	1.81	1.81	1.78	1.72	1.69	1.66	1.68	1.72	1.77
1972	1.75	1.77	1.75	1.64	1.58	1.58	1.52	1.51	1.40	1.26	1.34	1.27	1.53
1973	1.51	1.57	1.62	1.57	1.51	1.51	1.49	1.50	1.45	1.37	1.30	1.16	1.46
1974	1.22	1.21	1.23	1.20	1.30	1.30	1.33	1.31	1.30	1.30	1.34	1.36	1.28
1975	1.48	1.56	1.66	1.70	1.49	1.44	1.43	1.39	1.35	1.28	1.30	1.34	1.45
1976	1.34	1.37	1.38	1.34	1.31	1.26	1.28	1.28	1.23	1.26	1.35	1.46	1.32
1977	1.56	1.62	1.58	1.51	1.50	1.52	1.51	1.47	1.49	1.43	1.45	1.54	1.52
1978	1.59	1.64	1.62	1.63	1.62	1.59	1.58	1.56	1.53	1.51	1.43	1.51	1.57
1979	1.54	1.55	1.59	1.54	1.54	1.56	1.56	1.55	1.53	1.50	1.48	1.42	1.53
1980	1.40	1.43	1.40	1.39	1.39	1.39	1.41	1.39	1.35	1.36	1.40	1.43	1.40
1981	1.48	1.53	1.56	1.54	1.55	1.53	1.53	1.51	1.46	1.47	1.47	1.50	1.51
1982	1.57	1.61	1.62	1.60	1.59	1.56	1.55	1.49	1.45	1.43	1.45	1.41	1.53
1983	1.36	1.39	1.36	1.34	1.33	1.33	1.34	1.32	1.32	1.32	1.35	1.40	1.35
1984	1.48	1.56	1.62	1.59	1.57	1.57	1.55	1.51	1.47	1.45	1.44	1.47	1.52
1985	1.51	1.56	1.55	1.53	1.52	1.50	*	1.46	*	*	1.51	*	1.52
1986 2/	*	1.72											

Continued--

Table 9.--Feed-price ratios for livestock, poultry, and milk, by months, 1971-86--continued

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
EGG/FEED, U.S. basis 5/													
1971	7.1	6.9	7.2	8.2	7.1	7.0	7.6	6.5	6.4	6.4	7.0	6.9	7.0
1972	7.7	6.9	8.0	8.7	9.0	7.3	7.7	7.9	6.9	6.4	7.1	8.3	7.7
1973	8.6	8.2	8.6	8.5	8.8	8.4	7.5	7.0	6.2	5.8	6.2	5.7	7.5
1974	6.7	6.5	6.6	7.2	7.2	7.2	7.6	6.5	6.5	6.3	6.4	6.8	6.8
1975	7.5	7.1	8.1	9.0	8.6	8.2	7.4	7.3	7.5	6.8	6.8	7.6	7.7
1976	7.7	7.8	8.7	9.1	8.5	8.1	7.3	6.8	5.9	5.8	6.7	7.2	7.5
1977	7.6	7.1	7.3	7.4	6.7	7.5	7.4	6.7	6.3	5.6	6.4	7.0	6.9
1978	7.3	7.0	7.5	8.0	7.8	7.7	8.0	7.4	6.9	6.7	6.1	6.1	7.2
1979	6.4	6.1	6.8	7.3	6.6	6.0	6.4	6.0	5.4	5.6	5.7	6.0	6.2
1980	6.2	5.7	6.0	6.6	5.9	5.7	5.6	5.9	5.2	5.2	5.5	5.8	5.8
1981	6.4	6.5	7.2	6.7	6.6	6.8	7.1	6.6	5.6	5.3	5.7	5.4	6.3
1982	6.0	6.3	6.3	6.0	5.7	5.8	6.1	5.8	6.0	5.8	5.7	6.1	6.0
1983	6.0	6.2	6.9	7.7	8.8	8.5	7.4	8.6	6.5	5.8	5.8	5.8	7.0
1984	5.9	5.7	6.5	6.3	5.4	5.6	6.3	5.7	5.5	5.9	5.8	6.5	5.9
1985	7.1	7.3	7.5	7.4	7.2	6.9	*	6.5	*	*	6.8	*	7.1
1986 2/	*	7.0											
BROILER/FEED, U.S. basis 6/													
1971	2.9	2.7	2.7	2.5	2.8	3.1	3.1	2.7	2.8	3.0	3.3	3.0	2.9
1972	3.2	2.9	2.7	2.6	2.9	3.1	3.5	3.9	3.3	2.9	3.4	4.0	3.2
1973	3.5	2.9	2.5	2.3	2.5	2.8	2.7	2.7	2.7	2.5	2.6	2.3	2.7
1974	2.6	2.5	2.6	2.4	2.7	2.9	2.9	2.8	3.1	3.4	3.7	2.6	2.9
1975	3.6	3.5	3.4	3.0	3.1	3.2	3.1	3.0	3.1	2.8	2.8	2.7	3.1
1976	2.5	2.4	2.3	2.3	2.5	2.7	2.7	2.6	2.6	2.7	3.0	2.9	2.6
1977	3.1	3.0	2.7	2.6	2.8	3.0	3.0	3.3	3.3	3.5	3.7	3.1	3.1
1978	3.1	2.9	2.8	2.9	3.1	3.3	3.1	3.0	3.2	2.9	2.5	2.3	2.9
1979	2.4	2.2	2.6	2.7	2.8	2.6	2.5	2.3	2.6	2.6	3.3	3.0	2.6
1980	2.9	2.8	2.5	2.5	2.6	2.6	2.6	2.3	2.4	2.6	2.6	2.5	2.6
1981	2.4	2.4	2.4	2.3	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.5	2.5
1982	2.6	2.5	2.5	2.5	2.6	2.7	2.4	2.3	2.4	2.6	2.8	2.8	2.6
1983	2.7	2.5	2.8	2.9	3.1	3.1	3.1	2.7	2.7	2.7	3.0	2.7	2.8
1984	2.8	2.6	2.8	2.7	2.9	2.9	2.8	2.8	3.1	3.2	3.1	3.1	2.9
1985	3.2	3.1	3.5	3.2	3.2	3.1	*	3.2	*	*	4.5	*	3.4
1986 2/	*	4.6											
TURKEY/FEED, U.S. basis 7/													
1971	4.7	4.7	4.8	5.1	4.9	4.8	4.7	4.6	4.5	4.5	4.4	4.4	4.7
1972	4.3	4.3	4.5	4.4	4.0	3.7	4.1	4.8	4.2	3.8	3.9	4.3	4.2
1973	4.9	5.0	5.3	4.8	4.0	3.8	3.8	3.4	3.2	3.1	2.9	2.9	3.9
1974	3.0	3.0	3.3	3.6	3.6	3.7	3.8	3.6	3.8	3.9	4.2	4.2	3.6
1975	4.2	4.3	4.5	4.4	4.0	3.9	4.0	3.9	3.9	3.5	3.3	3.4	3.9
1976	3.4	3.5	3.5	3.7	3.5	3.4	3.6	3.4	3.4	3.5	3.5	3.8	3.5
1977	4.0	4.3	4.5	4.5	4.3	4.2	4.3	4.2	4.3	4.4	4.5	4.8	4.4
1978	4.9	5.0	5.1	5.4	5.0	4.6	4.3	4.3	4.2	3.9	3.5	3.7	4.5
1979	3.7	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.5	3.5	3.7
1980	3.7	4.0	3.9	3.5	3.1	3.1	3.2	3.0	3.0	3.3	3.3	3.2	3.4
1981	3.1	2.8	3.1	2.9	3.0	3.0	3.0	3.0	3.0	3.2	3.4	3.5	3.1
1982	3.8	3.9	3.9	3.0	2.9	2.9	2.9	2.7	2.9	3.0	2.8	2.8	3.1
1983	3.0	3.0	3.1	3.5	3.6	3.2	3.3	3.3	3.3	3.3	3.6	3.8	3.3
1984	3.9	4.4	5.0	5.5	4.7	3.8	3.7	3.7	3.7	3.8	4.2	4.5	4.2
1985	5.0	5.5	5.5	5.5	3.4	3.5	*	3.5	*	*	4.5	*	4.5
1986 2/	*	4.9											

1/ Bushels of corn equal in value to 100 pounds of hog, live weight. 2/ Preliminary. 3/ Based on price of Choice beef-steers, 900-1,100 pounds. 4/ Pounds of 16-percent mixed dairy feed equal in value to 1 pound whole milk. 5/ Pounds of laying feed equal in value to 1 dozen eggs. 6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight. 7/ Pounds of turkey grower feed equal in value to 1 pound of turkey, live weight. *Beginning March 1986 data reported shifted from monthly to quarterly.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

Table 10.--Byproduct feeds: Average wholesale price a ton, bulk, specified markets, by months, 1970 to date

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
						Dollars per ton							
Distillers' dried grains, Lawrenceburg													
1970	61.00	64.75	66.75	66.90	68.25	68.75	64.50	61.00	61.00	61.00	64.00	65.00	64.41
1971	66.60	61.00	59.00	58.00	59.00	58.70	58.00	60.10	62.25	64.25	64.00	65.10	61.33
1972	124.50	70.60	73.50	77.50	87.30	98.75	103.60	98.00	95.70	126.50	126.40	141.75	102.00
1973	154.10	119.20	117.50	126.25	129.70	123.90	106.25	94.00	90.50	92.75	98.00	120.00	114.35
1974	123.20	123.80	147.50	136.00	127.50	115.50	102.00	99.20	100.25	102.00	107.60	119.25	116.98
1975	125.50	121.75	110.40	97.60	107.75	114.50	107.60	102.50	101.50	110.20	123.00	126.40	112.39
1976	104.40	127.25	126.00	133.00	141.25	145.00	142.60	141.00	143.50	143.10	130.75	110.70	132.38
1977	113.60	112.25	117.10	123.00	124.60	124.00	123.75	123.00	124.00	125.60	124.50	118.60	121.17
1978	143.70	116.00	122.00	128.50	130.00	130.00	128.00	121.50	120.30	122.90	131.40	139.00	127.78
1979	160.00	153.00	147.50	145.00	143.60	134.70	124.00	121.10	122.60	126.00	132.00	144.50	137.83
1980	150.00	165.75	171.25	175.20	175.25	167.50	153.00	145.10	155.25	164.40	164.50	156.00	161.93
1981	150.00	151.25	153.75	148.00	146.25	147.60	139.40	136.50	142.00	147.00	153.00	145.25	146.67
1982	137.60	136.25	137.00	137.00	138.75	136.75	140.20	144.50	147.00	150.20	150.60	155.60	142.62
1983	167.50	175.00	183.20	189.75	190.00	185.00	173.50	165.50	168.00	165.75	156.60	147.75	172.30
1984	139.00	120.10	96.50	93.00	94.25	96.00	94.00	87.40	83.25	85.00	88.75	95.50	97.73
1985	96.50	99.70	105.25	110.80	115.00	113.75	109.50	112.40	111.90	109.75	102.10	---	107.88
1986	131.50	129.00											
Brewers' dried grains, Milwaukee													
1970	57.30	56.90	54.50	55.90	60.90	56.50	49.40	46.50	48.75	49.20	45.50	46.90	52.35
1971	46.90	47.50	48.00	50.50	56.10	51.90	49.50	51.25	51.70	49.40	46.00	50.80	49.96
1972	60.10	67.80	74.90	87.00	95.00	93.25	76.50	66.10	93.30	106.75	82.20	108.75	84.30
1973	98.50	112.60	117.60	122.25	122.40	103.00	81.25	88.90	81.50	63.40	81.60	119.40	99.36
1974	97.25	111.00	120.25	108.80	98.50	71.00	75.40	92.10	72.40	74.25	86.10	92.40	91.62
1975	86.80	99.00	93.25	89.00	104.40	92.60	95.60	84.90	88.20	96.60	100.90	105.90	94.76
1976	120.50	119.00	120.60	130.10	134.50	127.10	114.40	105.00	126.75	121.10	86.75	82.80	115.72
1977	85.00	88.60	98.10	108.25	101.20	89.50	93.00	88.00	82.40	87.00	75.75	74.20	89.25
1978	92.25	104.60	112.00	113.50	113.20	111.75	100.75	81.20	89.00	107.50	115.00	109.50	104.19
1979	116.00	124.80	115.10	116.70	120.80	109.00	96.25	93.00	105.25	103.75	107.00	115.00	110.22
1980	118.60	133.75	145.25	149.00	149.25	121.75	93.80	110.50	114.10	94.20	85.00	95.75	117.58
1981	99.60	109.25	117.50	99.40	103.25	97.50	85.00	95.75	98.50	89.00	88.00	87.40	97.52
1982	91.25	102.90	102.40	108.50	113.10	97.60	95.60	104.25	104.00	102.00	106.00	108.60	103.02
1983	122.25	127.75	128.10	136.00	141.00	136.25	123.50	106.00	98.40	102.40	88.00	80.25	115.82
1984	83.80	77.30	63.40	78.25	86.40	61.25	46.25	47.00	53.10	70.00	60.50	50.60	64.82
1985	70.60	74.50	71.25	93.00	106.25	71.90	58.10	81.50	78.75	67.10	61.25	61.25	74.62
1986	68.70	83.10											
Corn gluten feed, 21% protein, Illinois Points													
1970	50.00	52.50	54.00	57.00	59.00	50.25	50.00	48.50	48.00	48.00	45.00	41.60	50.32
1971	40.00	40.00	44.00	51.00	52.75	47.20	48.50	48.75	46.40	43.50	45.10	48.00	46.27
1972	49.75	54.40	58.80	68.50	79.80	79.25	77.25	66.00	72.00	78.25	79.00	97.00	71.67
1973	92.25	92.50	94.40	105.75	108.20	85.25	79.00	74.60	75.75	72.00	83.00	120.70	90.28
1974	91.00	100.00	103.75	92.80	90.25	80.50	77.00	88.40	80.00	81.60	83.90	91.50	88.39
1975	88.60	90.25	86.50	87.60	92.75	87.00	83.00	82.50	90.00	98.10	106.00	107.90	91.68
1976	114.00	115.10	108.00	117.50	125.25	122.00	110.60	114.80	117.50	108.80	89.00	80.40	110.25
1977	78.00	78.00	89.60	103.25	101.60	91.50	89.00	91.00	89.60	88.00	88.00	89.60	89.76
1978	96.25	107.60	113.50	115.40	118.60	122.00	121.60	120.50	117.90	122.50	131.00	130.00	118.07
1979	129.00	134.00	132.50	135.00	140.00	138.75	120.60	105.00	113.75	113.75	116.00	123.70	125.17
1980	130.00	126.25	131.25	138.00	140.00	120.00	114.50	121.25	122.40	111.00	101.75	107.25	121.97
1981	108.50	110.00	110.00	113.80	117.00	117.00	112.00	112.00	112.00	112.00	114.25	110.40	112.41
1982	115.00	109.50	111.20	120.00	125.00	117.50	112.80	110.00	111.75	114.00	120.00	127.00	116.15
1983	135.00	140.60	136.00	136.25	135.00	118.75	111.25	113.75	106.00	83.75	79.70	78.75	114.57
1984	69.40	76.00	80.10	80.60	79.80	73.90	61.60	59.70	63.25	68.50	74.10	78.00	72.08
1985	81.25	86.60	89.00	91.80	92.50	89.60	97.10	96.00	90.00	87.50	84.30	88.10	89.48
1986	97.80	105.50											

Continued--

Table 10.--Byproduct feeds: Average wholesale price a ton, bulk, specified markets, by months, 1970 to date--continued

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
						Dollars per ton							
Corn gluten meal, 60% protein, Illinois Points													
1970	146.00	143.00	134.50	130.00	130.50	132.00	132.00	132.00	134.00	134.00	136.00	135.60	134.97
1971	131.00	126.00	121.60	118.75	121.25	125.20	130.50	137.00	142.00	146.50	149.25	150.80	133.32
1972	143.00	133.00	132.80	158.00	191.20	238.50	266.25	257.00	303.60	394.50	316.30	276.00	234.18
1973	221.25	210.70	200.75	234.25	246.80	267.75	267.50	254.00	204.90	180.00	214.50	263.40	230.48
1974	217.75	221.60	217.50	204.00	198.50	181.25	191.50	209.60	211.00	212.00	215.20	222.00	208.49
1975	229.20	237.75	238.25	241.00	248.00	254.00	250.80	208.10	185.50	209.30	257.40	270.20	235.79
1976	294.00	298.00	267.80	246.00	258.00	288.75	297.80	287.50	296.00	294.40	275.90	208.20	276.03
1977	182.00	182.60	215.30	243.75	250.00	250.00	248.75	245.50	220.00	213.75	201.75	216.00	222.45
1978	232.75	249.20	243.75	243.75	252.60	271.90	280.00	270.00	234.00	241.75	304.10	325.00	262.40
1979	316.90	275.00	260.60	263.10	269.00	246.25	222.50	206.00	211.90	220.00	233.00	268.10	249.36
1980	302.00	288.75	296.25	302.00	307.50	292.50	239.00	235.00	256.25	261.00	237.50	249.40	272.26
1981	260.00	245.25	244.40	260.50	275.00	271.25	243.00	225.00	225.00	228.00	237.50	229.50	245.37
1982	221.25	207.50	215.00	246.25	265.00	267.50	251.00	238.75	235.00	213.00	242.50	300.00	241.90
1983	326.25	308.75	283.00	275.00	284.00	258.75	245.00	256.25	271.00	266.25	236.75	218.75	269.15
1984	213.80	211.30	215.60	240.00	232.00	215.60	203.75	191.00	172.50	169.20	174.50	198.10	203.11
1985	211.25	208.70	208.75	219.50	219.40	208.10	198.75	192.90	210.60	216.90	211.50	206.25	209.38
1986	208.00	222.50											
Meat and bone meal, Kansas City													
1970	96.00	96.60	101.10	101.50	102.90	93.75	99.30	92.75	92.10	95.60	94.75	98.00	97.03
1971	98.25	96.40	94.00	95.00	100.00	104.40	118.90	121.25	117.50	118.75	127.40	131.30	110.26
1972	126.90	134.20	154.40	184.40	224.00	266.25	240.00	192.50	315.00	398.10	343.50	355.00	244.52
1973	201.90	174.00	220.00	328.75	306.00	221.25	160.00	139.00	143.75	138.10	175.00	196.25	200.33
1974	135.00	183.00	153.10	155.40	152.50	137.50	137.50	151.00	149.40	156.90	162.00	168.10	153.45
1975	154.00	150.50	141.90	150.50	158.10	158.10	159.00	163.10	205.00	253.50	232.50	184.00	175.85
1976	203.75	183.75	210.50	240.00	261.25	237.50	259.00	288.75	270.00	222.00	168.75	169.50	226.23
1977	193.75	183.75	210.00	186.40	189.00	186.25	241.90	210.60	204.50	210.00	204.40	202.50	201.92
1978	218.75	233.50	228.60	230.00	229.50	266.90	264.40	253.10	239.50	265.00	254.50	219.40	241.93
1979	238.10	256.50	233.75	231.90	229.50	248.20	253.75	208.50	183.75	194.40	255.50	248.60	230.20
1980	275.50	288.60	300.60	264.50	258.75	237.50	231.50	245.00	246.25	235.00	247.50	240.10	255.90
1981	234.50	230.25	221.90	211.00	206.25	209.40	211.00	220.60	208.75	208.00	204.40	192.00	213.17
1982	186.25	183.75	209.30	210.60	225.00	232.50	231.00	246.90	213.10	199.50	198.75	244.50	215.10
1983	237.50	216.25	238.50	234.40	236.00	209.40	227.50	218.75	214.00	196.90	176.50	169.40	214.59
1984	162.80	178.00	177.50	175.60	175.70	173.10	146.25	126.40	108.10	120.00	130.40	140.60	151.20
1985	151.25	164.75	170.60	173.50	168.75	152.80	160.00	150.00	170.90	175.00	173.20	178.40	165.76
1986	187.10	183.10											
Fish meal, 65% protein: Domestic, East Coast													
1970	174.00	188.10	190.00	187.00	182.00	178.75	179.00	174.50	170.00	154.30	152.75	162.00	174.37
1971	160.00	160.00	160.00	162.00	164.00	165.00	165.25	160.25	180.20	176.75	179.50	191.80	168.73
1972	199.00	216.00	231.25	280.00	375.00	411.90	420.00	407.50	465.00	570.00	536.00	490.60	383.52
1973	462.50	420.00	411.25	587.50	538.00	446.25	405.00	337.00	276.25	258.75	252.00	312.50	392.25
1974	271.25	299.00	298.75	275.00	256.25	228.75	220.00	240.00	225.00	219.00	237.50	251.25	251.81
1975	257.00	268.75	270.00	267.00	271.90	272.00	279.00	270.00	282.50	352.50	383.75	332.50	292.24
1976	366.25	363.10	368.50	402.50	405.00	423.10	437.50	481.25	489.50	421.25	313.30	319.40	399.22
1977	335.00	342.50	353.00	363.75	365.00	362.50	377.50	395.00	373.00	356.25	316.90	333.50	356.16
1978	353.75	370.00	388.75	391.25	388.00	383.75	395.00	406.25	390.00	375.00	382.00	355.00	381.56
1979	353.75	366.00	370.00	381.25	391.50	403.75	398.75	375.00	355.00	342.50	365.00	380.00	373.54
1980	427.00	460.00	502.50	490.00	468.75	421.25	405.00	418.75	413.75	404.00	391.25	365.00	430.60
1981	378.00	383.75	370.00	354.00	370.00	377.50	377.00	360.00	360.00	335.00	306.25	315.50	357.25
1982	311.25	324.25	346.00	370.00	375.00	370.00	363.00	362.50	357.50	336.50	325.00	397.00	353.17
1983	415.00	425.00	423.50	407.50	392.60	373.75	383.75	381.25	360.00	354.00	329.00	298.75	378.68
1984	291.90	295.00	309.50	308.25	308.90	290.90	280.60	280.00	231.75	208.90	205.80	207.25	268.23
1985	240.50	284.50	259.00	297.50	291.00	287.50	320.00	290.00	286.90	272.50	278.00	303.10	284.21
1986	320.40	318.00											

N.Q.=No quotes.
Source: Grain and Feed Market News, AMS, USDA.

Table 11.--Corn, sorghum, barley, and oats exports, 1975/76 to date

Year and month	CORN			SORGHUM GRAIN	Year and month	BARLEY		OATS	
	Grain only	Total process	Grand total			Grain only	Total	Grain only	Total
	Bushels					Bushels			
1975/76					1975/76				
Sept	75,053,640	1,901,587	76,955,227	27,989,402	June	836,264	975,155	57,472	61,893
Oct	132,616,891	1,149,080	133,765,971	15,087,217	July	1,950,140	2,047,409	206,451	405,851
Nov	165,253,446	954,713	166,208,159	23,107,812	Aug	940,228	1,013,720	156,478	311,810
					Sept	368,773	415,306	1,707,307	1,857,893
1st Qtr	372,923,977	4,005,380	376,929,357	66,184,431	1st Qtr	4,095,405	4,451,590	2,127,708	2,637,447
Dec	152,819,984	898,188	153,718,172	25,175,934	Oct	3,232,356	3,290,346	2,690,989	2,782,316
Jan	137,508,424	888,234	138,396,658	28,001,886	Nov	1,374,011	1,430,450	2,673,189	2,828,325
Feb	136,507,142	889,938	137,397,080	19,016,748	Dec	4,898,838	4,971,035	2,451,702	2,485,337
2nd Qtr	426,835,550	2,676,360	429,511,910	72,194,568	2nd Qtr	9,505,205	9,691,831	7,815,880	8,095,978
Mar	128,992,136	1,110,091	130,102,227	21,010,849	Jan	1,015,730	1,099,219	92,717	227,968
Apr	164,220,528	1,145,567	165,366,095	16,787,280	Feb	137,889	268,500	164,429	332,902
May	153,177,354	860,161	154,037,515	3,622,364	Mar	2,081,973	2,204,333	96,554	102,936
3rd Qtr	446,390,018	3,115,819	449,505,837	41,420,493	3rd Qtr	3,235,592	3,572,052	353,700	663,806
June	159,436,466	1,202,546	160,639,012	7,894,661					
July	138,125,613	1,200,167	139,325,780	22,413,313	Apr	1,330,542	1,404,961	196,085	505,098
Aug	120,781,441	1,015,301	121,796,742	22,054,372	May	4,634,179	4,654,198	1,783,345	1,807,957
4th Qtr	418,343,520	3,418,014	421,761,534	52,362,346	4th Qtr	5,964,721	6,059,159	1,979,430	2,313,055
TOTAL	1,664,493,065	13,215,573	1,677,708,638	232,161,838	TOTAL	22,800,923	23,774,632	12,276,718	13,710,286
					1976/77				
1976/77					June	1,303,146	1,462,324	365,100	399,404
Sept	109,747,811	875,408	110,623,219	24,870,524	July	3,287,074	3,355,973	61,659	253,988
Oct	178,936,003	816,467	179,779,470	16,635,698	Aug	3,478,167	3,498,931	2,244,591	2,297,468
Nov	180,098,843	974,715	181,073,558	20,549,541	Sept	6,615,438	6,722,402	1,920,409	1,928,142
1st Qtr	468,782,657	2,666,590	471,476,247	62,055,763	1st Qtr	14,683,825	15,039,630	4,591,759	4,879,002
Dec	136,223,158	891,377	137,114,535	24,648,500	Oct	13,048,078	13,356,005	570,607	867,353
Jan	126,956,735	757,643	127,714,378	25,601,274	Nov	7,064,569	7,271,589	2,149,816	2,187,001
Feb	119,422,523	998,871	120,421,394	30,474,848	Dec	7,109,317	7,222,045	603,985	630,520
2nd Qtr	382,602,416	2,647,891	385,250,307	80,724,622	2nd Qtr	27,221,964	27,849,639	3,324,408	3,684,874
Mar	150,674,935	734,269	151,409,204	27,022,891	Jan	3,290,070	3,380,086	84,385	146,665
Apr	141,387,428	993,996	142,381,424	20,838,684	Feb	8,348,213	8,453,835	29,925	167,523
May	138,834,555	927,246	139,761,801	13,598,209	Mar	975,528	1,069,154	57,888	217,299
3rd Qtr	430,896,918	2,655,511	433,552,429	61,459,784	3rd Qtr	12,613,811	12,903,075	172,198	531,487
June	125,506,250	1,323,324	126,829,574	10,599,319					
July	116,130,094	1,038,968	117,169,062	20,078,292	Apr	1,620,641	1,798,769	26,399	191,167
Aug	121,200,994	1,068,623	122,269,617	18,996,553	May	8,647,500	8,739,038	179,887	351,199
4th Qtr	362,837,338	3,430,915	366,268,253	49,674,164	4th Qtr	10,268,141	10,537,807	206,286	542,366
TOTAL	1,645,119,329	11,400,907	1,656,547,236	253,914,333	TOTAL	64,787,741	66,330,151	8,294,651	9,637,729
					1977/78				
1977/78					June	7,678,469	7,749,102	485,973	621,814
Sept	137,146,892	1,095,916	138,242,808	17,077,461	July	11,291,749	11,439,168	412,342	566,723
Oct	118,932,956	1,155,447	120,088,403	8,628,406	Aug	6,149,089	6,260,217	1,064,326	1,109,150
Nov	143,025,556	893,055	143,918,611	17,228,249	Sept	9,278,826	9,462,496	48,597	359,154
1st Qtr	399,105,404	3,144,418	402,249,822	42,934,116	1st Qtr	34,398,133	34,910,983	2,011,238	2,656,841
Dec	153,111,226	1,207,979	154,319,205	30,106,414	Oct	8,026,753	8,071,324	1,155,584	1,289,871
Jan	126,914,873	923,086	127,837,959	21,237,901	Nov	2,186,923	2,354,670	2,896,689	3,064,137
Feb	127,836,745	829,941	128,666,686	22,910,641	Dec	3,856,164	4,003,955	2,369,271	2,428,974
2nd Qtr	407,862,844	2,961,006	410,823,850	74,254,956	2nd Qtr	14,069,840	14,429,949	6,421,544	6,782,982
Mar	156,643,619	1,393,115	158,036,734	23,826,344	Jan	1,413,634	1,597,572	217,675	406,388
Apr	160,804,806	1,043,694	161,848,500	17,768,956	Feb	271,263	466,385	394,969	682,456
May	206,846,481	1,455,592	208,302,073	18,074,476	Mar	145,741	258,834	28,124	445,153
3rd Qtr	524,294,906	3,892,401	528,187,307	59,669,776	3rd Qtr	1,830,638	2,322,791	640,768	1,533,997
June	214,018,311	751,873	214,770,184	10,145,984					
July	171,102,334	987,750	172,090,084	19,738,833	Apr	2,017,960	2,269,261	23,525	261,335
Aug	180,012,802	1,074,040	181,086,842	16,098,547	May	3,180,917	3,272,925	905,899	1,036,135
4th Qtr	565,133,447	2,813,663	567,947,110	45,983,364	4th Qtr	5,198,877	5,542,186	929,424	1,297,470
TOTAL	1,896,396,601	12,811,488	1,909,208,089	222,842,212	TOTAL	55,497,488	57,205,909	10,002,974	12,271,290

Continued--

Table 11.--Corn, sorghum, barley, and oats exports, 1975/76 to date--continued

Year and month	CORN			SORGHUM GRAIN	Year and month	BARLEY		OATS	
	Grain only	Total process	Grand total			Grain only	Total	Grain only	Total
	Bushels					Bushels			
1978/79					1978/79				
Sept	176,033,904	827,179	176,861,083	7,735,700	June	4,205,002	4,353,093	435,464	588,122
Oct	139,263,490	718,259	139,981,749	8,615,589	July	5,066,677	5,156,021	1,303,880	1,668,021
Nov	153,542,028	771,927	154,313,955	18,954,600	Aug	4,929,079	5,006,603	5,293,313	5,369,592
1st Qtr	468,839,422	2,317,365	471,156,787	35,305,889	Sept	4,242,932	4,291,050	48,251	250,893
Dec	158,883,560	826,213	159,709,773	18,988,714	1st Qtr	18,443,690	18,806,767	7,080,908	7,876,628
Jan	129,906,845	949,696	130,856,541	19,285,385	Oct	3,080,214	3,167,923	1,343,835	1,576,218
Feb	124,518,081	576,007	125,094,088	26,989,459	Nov	978,381	1,019,054	285,557	519,770
2nd Qtr	413,308,486	2,351,916	415,660,402	65,263,558	Dec	266,814	471,044	1,227,047	1,336,346
Mar	169,263,126	1,040,501	170,303,627	22,069,207	2nd Qtr	4,325,409	4,658,021	2,856,439	3,432,334
Apr	187,095,271	986,476	188,081,747	13,038,349	Jan	574,365	682,389	41,947	283,427
May	198,288,881	846,694	199,135,575	14,922,212	Feb	46,265	107,278	28,584	138,700
3rd Qtr	554,647,278	2,873,671	557,520,949	50,029,768	Mar	3,735	41,817	54,088	288,819
June	229,474,993	1,302,191	230,777,184	9,452,058	3rd Qtr	624,365	831,484	124,619	710,946
July	221,669,115	1,002,267	222,671,382	13,011,285	Apr	220,154	309,868	81,658	237,250
Aug	225,178,576	706,245	225,884,821	17,029,193	May	1,035,595	1,091,820	195,887	418,606
4th Qtr	676,322,684	3,010,703	679,333,387	39,492,536	4th Qtr	1,255,749	1,401,688	277,545	655,856
TOTAL	2,113,117,870	10,553,655	2,123,671,525	190,091,751	TOTAL	24,649,213	25,697,960	10,339,511	12,675,764
1979/80					1979/80				
Sept	185,070,433	1,176,418	186,246,851	24,223,910	June	2,212,317	2,282,851	120,868	247,616
Oct	214,345,983	1,180,577	215,526,560	21,583,642	July	2,446,725	2,527,595	42,528	140,915
Nov	221,857,150	1,150,649	223,007,799	26,229,212	Aug	2,719,552	2,811,124	105,109	254,874
1st Qtr	621,273,566	3,507,644	624,781,210	72,036,764	Sept	2,221,823	2,276,736	144,474	211,556
Dec	223,411,029	945,756	224,356,785	26,386,501	1st Qtr	9,600,417	9,898,306	412,979	854,961
Jan	189,912,018	1,017,787	190,929,805	37,438,737	Oct	9,284,368	9,514,648	95,188	164,665
Feb	184,412,948	1,103,682	185,516,630	39,082,513	Nov	8,143,400	8,336,890	870,027	984,369
2nd Qtr	597,735,995	3,067,225	600,803,220	102,907,751	Dec	4,218,627	4,500,253	645,337	726,279
Mar	204,333,868	1,211,774	205,545,642	32,000,475	2nd Qtr	21,646,395	22,351,791	1,610,552	1,875,313
Apr	213,500,454	1,021,506	214,521,960	35,394,225	Jan	3,042,486	3,173,696	98,074	275,844
May	169,938,362	1,165,650	171,104,012	24,939,765	Feb	3,641,315	3,911,450	18,760	97,572
3rd Qtr	587,772,684	3,398,930	591,171,614	92,334,465	Mar	3,843,733	4,052,579	60,276	89,764
June	191,853,582	1,305,390	193,158,972	24,957,177	3rd Qtr	10,527,534	11,137,725	177,110	463,180
July	196,938,173	1,418,319	198,356,492	22,312,730	Apr	6,525,141	6,692,569	229,439	418,534
Aug	205,942,297	1,112,430	207,054,727	15,122,775	May	4,520,778	4,747,733	327,568	430,851
4th Qtr	594,734,052	3,836,139	598,570,191	62,392,682	4th Qtr	11,045,919	11,440,302	557,007	849,385
TOTAL	2,401,516,297	13,809,938	2,415,326,235	329,671,662	TOTAL	52,820,265	54,828,124	2,757,648	4,042,839
1980/81					1980/81				
Sept	202,462,112	1,065,907	203,528,019	19,533,279	June	5,022,971	5,097,866	580,924	1,006,889
Oct	240,698,485	1,581,013	242,279,498	22,543,461	July	3,628,339	3,702,871	327,415	785,586
Nov	244,706,069	1,165,206	245,871,275	25,367,196	Aug	9,211,534	9,349,242	638,725	1,101,431
1st Qtr	687,866,666	3,812,126	691,678,792	67,443,936	Sept	6,658,108	6,740,218	793,059	953,125
Dec	238,328,292	1,335,338	239,663,630	18,308,338	1st Qtr	24,520,952	24,890,197	2,340,123	3,847,031
Jan	207,962,746	1,147,496	209,110,242	28,807,953	Oct	5,504,702	5,554,355	1,306,243	1,597,563
Feb	199,682,732	971,791	200,654,523	28,934,912	Nov	6,666,060	6,808,903	46,960	363,072
2nd Qtr	645,973,770	3,454,625	649,428,395	76,051,203	Dec	8,916,215	9,085,383	785,897	861,436
Mar	221,866,761	1,243,104	223,109,865	26,318,245	2nd Qtr	21,086,977	21,448,641	2,139,100	2,822,071
Apr	184,884,549	1,749,260	186,633,809	19,487,235	Jan	6,315,403	6,388,116	189,156	573,991
May	207,201,786	1,892,894	209,094,680	22,218,323	Feb	11,466,729	11,500,117	1,087,421	1,400,038
3rd Qtr	613,953,096	4,885,258	618,838,354	68,023,803	Mar	4,666,953	4,776,513	230,384	633,818
June	157,486,785	1,956,787	159,443,572	19,998,909	3rd Qtr	22,449,085	22,664,746	1,506,961	2,607,847
July	146,636,959	1,437,410	148,074,369	29,469,237	Apr	3,516,330	3,542,993	1,560,078	2,260,296
Aug	139,188,454	1,326,449	140,514,903	32,171,898	May	4,087,044	4,173,387	1,293,251	1,730,912
4th Qtr	443,312,198	4,720,646	448,032,844	81,640,044	4th Qtr	7,603,374	7,716,380	2,853,329	3,991,208
TOTAL	2,391,105,730	16,872,655	2,407,978,385	293,158,986	TOTAL	75,660,388	76,719,964	8,839,513	13,268,157

Continued--

Table 11.--Corn, sorghum, barley, and oats exports, 1975/76 to date--continued

Year and month	CORN			SORGHUM GRAIN	Year and month	BARLEY		OATS	
	Grain only	Total process	Grand total			Grain only	Total	Grain only	Total
	Bushels					Bushels			
1981/82					1981/82				
Sept	149,655,085	1,089,867	150,744,952	30,963,092	June	1,457,555	1,508,625	372,009	549,202
Oct	194,694,429	1,033,605	195,728,034	28,388,473	July	6,528,945	6,661,102	366,463	1,092,743
Nov	174,729,965	1,521,537	176,251,502	18,657,408	Aug	12,243,107	12,365,441	648,960	782,716
					Sept	11,902,257	12,026,473	436,435	793,962
1st Qtr	519,079,479	3,645,009	522,724,488	78,008,973	1st Qtr	32,131,864	32,561,641	1,823,867	3,218,623
Dec	172,337,796	1,214,177	173,551,973	30,772,465	Oct	16,462,060	16,507,711	202,460	505,977
Jan	150,895,856	731,745	151,627,601	29,552,315	Nov	8,631,927	8,722,744	59,430	402,684
Feb	146,989,364	759,913	147,749,277	19,453,452	Dec	7,636,656	7,746,899	72,350	266,238
2nd Qtr	470,223,016	2,705,835	472,928,851	79,778,232	2nd Qtr	32,730,643	32,977,354	334,240	1,174,899
Mar	189,001,536	1,064,830	190,066,366	25,286,333	Jan	8,332,073	8,455,568	114,472	443,737
Apr	194,887,043	868,330	195,755,373	13,509,047	Feb	8,088,777	8,207,953	122,192	265,405
May	211,950,747	1,247,897	213,198,644	8,259,377	Mar	5,887,140	6,474,477	99,231	450,891
3rd Qtr	595,839,326	3,181,057	599,020,383	47,054,757	3rd Qtr	22,307,990	23,137,998	335,895	1,160,033
June	179,668,292	774,943	180,443,235	11,386,253					
July	119,477,568	1,038,849	120,516,417	20,242,006	Apr	3,808,701	3,863,179	38,448	553,340
Aug	112,474,351	1,478,937	113,953,288	23,142,497	May	7,403,111	7,517,119	154,417	446,421
4th Qtr	411,620,211	3,292,729	414,912,940	54,770,756	4th Qtr	11,211,812	11,380,298	192,865	999,761
TOTAL	1,996,762,032	12,824,630	2,009,586,662	259,612,718	TOTAL	98,382,309	100,057,291	2,686,867	6,553,316
					1982/83				
1982/83					June	5,928,163	6,296,843	52,361	603,692
Sept	107,215,457	843,567	108,059,024	20,428,581	July	4,165,507	4,862,814	70,751	240,205
Oct	166,335,228	882,718	167,217,946	18,383,056	Aug	8,196,824	8,579,926	48,700	197,183
Nov	169,586,560	1,300,624	170,887,184	19,234,195	Sept	5,561,112	5,678,174	197,917	289,602
1st Qtr	443,137,245	3,026,909	446,164,154	58,045,832	1st Qtr	23,851,606	25,417,757	369,729	1,330,682
Dec	173,558,165	1,014,843	174,573,008	29,354,316	Oct	1,440,901	1,516,155	71,782	581,391
Jan	174,707,042	733,757	175,440,799	25,050,652	Nov	2,494,002	2,987,818	158,162	197,106
Feb	161,304,672	706,273	162,010,945	17,975,892	Dec	1,833,788	1,940,049	29,127	210,451
2nd Qtr	509,569,879	2,454,873	512,024,752	72,380,860	2nd Qtr	5,768,691	6,444,022	259,071	988,948
Mar	169,409,637	1,010,853	170,420,490	19,694,606	Jan	7,454,630	7,580,831	41,047	75,440
Apr	157,314,623	1,258,502	158,573,125	5,348,135	Feb	1,410,838	1,492,942	32,518	123,897
May	148,587,837	1,370,305	149,958,142	8,726,291	Mar	3,523,829	3,669,317	26,152	80,122
3rd Qtr	475,312,097	3,639,660	478,951,757	33,769,032	3rd Qtr	12,389,297	12,743,090	99,717	279,459
June	150,589,182	1,232,887	151,822,069	9,889,322					
July	123,534,997	1,034,822	124,569,819	16,494,246	Apr	29,375	223,988	16,040	207,447
Aug	119,201,764	991,337	120,193,101	19,474,765	May	2,130,966	2,395,182	5,867	206,939
4th Qtr	393,325,943	3,259,046	396,584,989	45,858,333	4th Qtr	2,160,341	2,619,170	21,907	414,386
TOTAL	1,821,345,164	12,380,488	1,833,725,652	210,054,057	TOTAL	44,169,935	47,224,039	750,424	3,013,475
					1983/84				
1983/84					June	1,749,278	1,962,746	20,066	170,314
Sept	142,605,075	1,677,443	144,282,518	24,843,392	July	1,219,801	1,332,753	85,615	276,124
Oct	154,746,149	841,962	155,588,111	22,517,772	Aug	5,858,487	5,950,159	16,399	190,354
Nov	196,023,261	1,151,966	197,175,227	20,090,581	Sept	14,055,167	14,152,120	66,102	120,532
1st Qtr	493,374,485	3,671,371	497,045,856	67,451,745	1st Qtr	22,882,733	23,397,778	188,182	757,324
Dec	175,217,363	959,324	176,176,687	19,536,615	Oct	8,017,640	8,100,296	348,182	489,411
Jan	172,472,646	921,914	173,394,560	27,006,928	Nov	9,025,053	9,128,165	84,892	128,597
Feb	158,202,220	769,726	158,971,946	25,013,805	Dec	15,402,481	15,638,039	42,383	128,719
2nd Qtr	505,892,229	2,650,964	508,543,193	71,557,348	2nd Qtr	32,445,174	32,866,500	475,457	746,727
Mar	176,208,558	1,345,395	177,553,953	25,761,817	Jan	7,544,651	7,820,115	27,417	88,611
Apr	174,344,582	997,912	175,342,494	14,599,452	Feb	5,797,474	6,047,572	15,377	47,266
May	162,845,594	1,538,074	164,383,668	14,890,486	Mar	10,841,262	11,217,537	39,239	198,298
3rd Qtr	513,398,734	3,881,381	517,280,115	55,251,755	3rd Qtr	24,183,387	25,085,224	82,033	334,175
June	110,199,008	2,052,462	112,251,470	10,354,830					
July	128,242,982	1,825,250	130,068,232	21,979,636	Apr	5,570,656	5,968,499	171,313	220,808
Aug	135,289,472	1,050,371	136,339,843	17,884,104	May	3,735,785	4,106,217	24,589	113,676
4th Qtr	373,731,462	4,928,083	378,659,545	50,218,570	4th Qtr	9,306,441	10,074,716	195,902	334,484
TOTAL	1,886,396,910	15,131,799	1,901,528,709	244,479,418	TOTAL	88,817,735	91,424,218	941,574	2,172,710

Continued--

Table 11.--Corn, sorghum, barley, and oats exports, 1975/76 to date--continued

Year and month	CORN			SORGHUM GRAIN	Year and month	BARLEY		OATS	
	Grain only	Total process	Grand total			Grain only	Total	Grain only	Total
	Bushels					Bushels			
1984/85					1984/85				
Sept	107,064,816	951,331	108,016,147	26,778,001	June	4,668,354	4,884,210	16,340	204,719
Oct	154,055,992	1,177,835	155,233,827	36,290,021	July	1,506,275	2,146,787	51,644	162,650
Nov	242,124,317	842,579	242,966,896	22,711,771	Aug	4,965,763	5,155,469	28,335	37,065
					Sept	17,185,453	17,474,876	58,861	188,704
1st Qtr	503,245,125	2,971,745	506,216,870	85,779,793	1st Qtr	28,325,845	29,661,342	155,180	593,138
Dec	206,686,724	996,686	207,683,410	25,549,814	Oct	8,750,660	8,959,255	78,898	132,116
Jan	208,081,216	765,323	208,846,539	29,096,442	Nov	9,226,887	9,937,205	25,988	67,587
Feb	165,648,304	1,697,044	167,345,348	32,640,358	Dec	10,739,791	11,773,706	45,452	66,239
2nd Qtr	580,416,244	3,459,053	583,875,297	87,286,614	2nd Qtr	28,717,338	30,670,166	150,338	265,942
Mar	170,693,089	1,208,460	171,901,549	26,133,824	Jan	6,023,494	7,154,739	27,349	56,389
Apr	167,741,483	1,303,826	169,045,309	19,774,404	Feb	4,249,537	4,712,199	44,293	107,702
May	136,292,380	1,659,421	137,951,801	17,817,664	Mar	1,173,727	1,258,040	68,000	75,236
3rd Qtr	474,726,952	4,171,707	478,898,659	63,725,892	3rd Qtr	11,446,758	13,124,978	139,642	239,327
June	105,494,909	2,315,648	107,810,557	25,247,583					
July	95,527,431	1,230,827	96,758,258	18,747,724	Apr	227,362	367,280	35,822	120,640
Aug	90,839,919	986,860	91,826,779	16,117,507	May	2,937,606	3,013,712	13,925	48,363
4th Qtr	291,862,259	4,533,335	296,395,594	60,112,814	4th Qtr	3,164,968	3,380,992	49,747	169,003
TOTAL	1,850,250,580	15,135,840	1,865,386,420	296,905,113	TOTAL	71,654,909	76,837,478	494,907	1,267,410
1985/86					1985/86				
Sept	79,897,274	833,679	80,730,953	29,172,725	June	1,487,412	1,649,817	44,678	87,396
Oct	124,900,086	917,870	125,817,956	23,654,139	July	3,731,241	3,860,606	23,529	69,692
Nov	210,005,197	1,173,603	211,178,800	17,378,277	Aug	5,179,203	5,303,587	33,906	163,983
					Sept	831,326	937,470	52,866	89,470
1st Qtr	414,802,557	2,925,152	417,727,709	70,205,141	1st Qtr	11,229,182	11,751,480	154,979	410,541
Dec	175,971,674	2,540,388	178,512,062	11,858,105	Oct	2,652,026	2,799,218	120,219	153,203
Jan	164,709,634	1,351,663	166,061,297	17,264,657	Nov	3,768,477	3,869,960	111,195	350,174
Feb	119,524,523	1,157,729	120,682,252	13,994,213	Dec	112,702	237,932	23,556	37,750
2nd Qtr	460,205,831	5,049,780	465,255,611	43,116,975	2nd Qtr	6,533,205	6,907,110	254,970	541,127
Mar	97,479,313	922,855	98,402,168	6,723,066	Jan	1,119,603	1,546,100	8,934	69,750
Apr	57,426,414	786,654	58,213,068	8,597,402	Feb	49,160	116,456	43,584	96,515
May	46,520,450	1,254,677	47,775,127	11,610,994	Mar	1,148	192,476	250,397	288,260
3rd Qtr	201,426,177	2,964,186	204,390,363	26,931,462	3rd Qtr	1,169,911	1,855,032	302,915	454,525
June	55,802,755	1,016,137	56,818,892	10,467,071	Apr	720,309	816,587	49,085	93,425
July	44,609,875	871,083	45,480,958	17,830,311	May	57,584	472,599	473,733	693,272
Aug	50,484,684	1,068,258	51,552,942	9,436,885					
4th Qtr	105,897,314	2,955,478	153,852,792	37,734,267	4th Qtr	777,893	1,289,186	522,818	786,697
					Total	19,710,191	21,802,808	1,235,682	2,192,890
TOTAL	1,227,331,879	13,894,596	1,241,226,475	177,987,845					
1986/87					1986/87				
Sept.	80,082,655	1,181,307	81,263,962	14,227,263	June	2,000	276,815	79,108	128,492
					July	1,164,620	1,597,139	81,504	217,421
					Aug	12,319,164	12,514,711	73,364	335,437
					Sept	12,772,707	12,912,177	121,288	327,625
					1st Qtr	26,258,491	27,300,842	355,264	1,008,975

Total corn exports include grain only (white, yellow, seed, relief), dry process (cornmeal for relief, as grain, grits), and wet process (corn starch, sugar dextrose, glucose, high fructose). Sorghum includes seed and unmilled. Barley includes grain only (grain for malting purposes, other) and barley malt. Oats include grain and oatmeal (bulk and packaged).

Source: Bureau of the Census, U.S. Department of Commerce.

Table 12.--Corn, sorghum, barley, and oats imports, 1975/76 to date

Year and month	CORN Grain only	CORN Total	SORGHUM Total	Year and month	BARLEY Grain only	BARLEY Total	OATS Grain only	OATS Total
	Bushels				Bushels			
1975/76				1975/76				
Sept	48,468	49,894	1,177	June	759,873	1,016,094	95,341	104,362
Oct	172,388	204,758	0	July	898,065	1,262,809	87,448	95,062
Nov	19,550	69,861	0	Aug	2,358,988	2,707,006	64,522	66,588
				Sept	1,436,833	1,804,423	6,357	9,663
1st Qtr	240,406	324,513	1,177	1st Qtr	5,453,759	6,790,332	253,668	275,675
Dec	267,752	303,437	0	Oct	783,803	1,093,718	8,574	30,049
Jan	184,083	221,905	0	Nov	781,713	1,169,351	19,070	21,484
Feb	144,936	176,862	0	Dec	2,025,728	2,352,469	27,389	42,320
2nd Qtr	596,771	702,204	0	2nd Qtr	3,591,244	4,615,538	55,033	93,853
Mar	134,347	145,986	0	Jan	835,254	1,087,702	107,560	132,659
Apr	48,183	55,922	0	Feb	784,581	969,243	35,929	47,306
May	22,372	27,433	0	Mar	590,585	690,283	21,257	23,335
3rd Qtr	204,902	229,341	0	3rd Qtr	2,210,420	2,747,228	164,746	203,300
June	304,818	315,434	70					
July	78,435	87,714	48	Apr	587,540	659,960	27,889	48,705
Aug	72,218	76,070	0	May	858,273	964,963	11,753	14,926
4th Qtr	455,471	479,218	118	4th Qtr	1,445,813	1,624,923	39,642	63,631
TOTAL	1,497,550	1,735,276	1,295	TOTAL	12,701,236	15,778,021	513,089	636,459
				1976/77				
1976/77				June	2,009,994	2,236,414	15,553	34,491
Sept	136,434	138,356	0	July	637,977	857,761	64,577	67,191
Oct	83,151	94,029	0	Aug	1,245,395	1,467,011	4,525	12,429
Nov	266,733	314,577	0	Sept	798,349	1,046,108	21,936	29,934
1st Qtr	486,318	546,962	0	1st Qtr	4,691,715	5,607,294	106,591	144,045
Dec	177,310	190,508	0	Oct	4,818	141,142	14,876	32,860
Jan	70,481	96,489	0	Nov	196,948	318,012	14,817	20,315
Feb	145,926	157,106	0	Dec	404,334	538,177	78,462	89,895
2nd Qtr	393,717	444,103	0	2nd Qtr	606,100	997,331	108,155	143,070
Mar	7,498	27,487	0	Jan	946,916	1,102,450	120,235	132,798
Apr	87,050	99,854	188	Feb	493,961	624,453	197,133	206,396
May	438,329	443,685	95	Mar	738,623	902,746	284,257	300,785
3rd Qtr	532,877	571,026	283	3rd Qtr	2,179,500	2,629,649	601,625	639,979
June	312,460	313,099	0					
July	185,817	186,291	0	Apr	632,074	833,943	218,521	232,344
Aug	519,655	520,236	0	May	498,445	802,958	330,055	336,989
4th Qtr	1,017,932	1,019,626	0	4th Qtr	1,130,519	1,636,901	548,576	569,333
TOTAL	2,430,844	2,581,717	283	TOTAL	8,607,834	10,871,175	1,364,947	1,496,427
				1977/78				
1977/78				June	2,368,640	2,764,183	740,077	750,825
Sept	97,920	100,788	0	July	412,910	853,478	129,463	151,280
Oct	482,174	505,782	0	Aug	569,880	1,019,874	65,239	78,558
Nov	60,677	97,097	0	Sept	243,812	473,873	122,581	137,312
1st Qtr	640,771	703,667	0	1st Qtr	3,595,242	5,111,408	1,057,360	1,117,975
Dec	75,411	96,626	0	Oct	28,317	239,542	99,251	111,619
Jan	158,735	183,155	0	Nov	482,820	650,891	168,296	175,801
Feb	421,573	436,495	0	Dec	839,755	938,042	175,350	187,530
2nd Qtr	655,719	716,276	0	2nd Qtr	1,350,892	1,828,475	442,897	474,950
Mar	236,524	283,308	0	Jan	712,903	913,625	108,038	116,324
Apr	156,639	168,200	196	Feb	250,900	431,801	143,408	161,229
May	133,843	145,851	24	Mar	241,366	457,093	118,171	129,606
3rd Qtr	527,006	597,359	220	3rd Qtr	1,205,169	1,802,519	369,617	407,159
June	83,059	90,792	0					
July	188,531	194,522	10,231	Apr	69,881	225,945	121,018	135,023
Aug	302,798	304,310	11,101	May	221,767	505,948	95,055	110,756
4th Qtr	574,388	589,624	21,332	4th Qtr	291,648	731,893	216,073	245,779
TOTAL	2,397,884	2,606,926	21,552	TOTAL	6,442,951	9,474,295	2,085,947	2,245,863

Continued--

Table 12.--Corn, sorghum, barley, and oats imports, 1975/76 to date--continued

Year and month	CORN		SORGHUM	Year and month	BARLEY		OATS	
	Grain only	Total	Total		Grain only	Total	Grain only	Total
	Bushels				Bushels			
1978/79				1978/79				
Sept	80,998	82,019	0	June	276,896	532,672	127,847	137,213
Oct	11,397	21,149	0	July	986,064	1,418,338	37,885	47,913
Nov	42,821	54,334	0	Aug	234,024	548,660	23,378	32,299
				Sept	40,043	255,486	32,927	44,496
1st Qtr	135,216	157,502	0	1st Qtr	1,537,027	2,755,156	222,037	261,921
Dec	59,339	72,321	0	Oct	110,994	429,614	25,408	32,598
Jan	243,704	260,550	0	Nov	825,557	1,049,732	25,151	34,041
Feb	1,039	50,782	0	Dec	971,916	1,281,034	39,165	51,008
2nd Qtr	304,082	383,653	0	2nd Qtr	1,908,467	2,760,380	89,724	117,647
Mar	103,947	116,395	0	Jan	797,988	1,134,539	60,200	71,444
Apr	69,498	76,740	0	Feb	384,319	650,039	57,616	67,459
May	122,910	130,212	1,890	Mar	899,926	1,274,511	80,120	87,131
3rd Qtr	296,355	323,347	1,890	3rd Qtr	2,082,233	3,059,089	197,936	226,034
June	47,909	49,367	0					
July	278,155	280,696	0	Apr	447,587	845,535	67,809	74,249
Aug	90,816	94,387	0	May	737,200	1,117,318	47,728	67,072
4th Qtr	416,880	424,450	0	4th Qtr	1,184,787	1,962,853	115,537	141,321
TOTAL	1,152,533	1,288,952	1,890	TOTAL	6,712,514	10,537,478	625,234	746,923
1979/80				1979/80				
Sept	67,261	70,547	17	June	508,172	956,165	66,902	75,963
Oct	60,135	91,870	33	July	1,053,302	1,401,581	32,700	53,911
Nov	87,671	96,674	0	Aug	184,716	853,786	103,339	112,444
				Sept	146,405	480,704	81,605	103,334
1st Qtr	215,067	259,091	50	1st Qtr	1,892,595	3,692,236	284,546	345,652
Dec	44,485	67,828	0	Oct	481,803	755,918	45,908	61,834
Jan	49,000	64,908	0	Nov	511,546	736,945	54,732	57,802
Feb	72,887	93,576	0	Dec	1,046,665	1,322,822	50,978	64,850
2nd Qtr	166,372	226,312	0	2nd Qtr	2,040,014	2,815,685	151,618	184,486
Mar	121,254	129,375	0	Jan	702,837	977,405	48,718	56,241
Apr	4,185	15,705	1,802	Feb	245,660	680,313	46,740	58,823
May	74,202	84,856	0	Mar	958,739	1,536,331	68,318	91,744
3rd Qtr	199,641	229,936	1,802	3rd Qtr	1,907,236	3,194,049	163,776	206,808
June	11,404	16,394	0					
July	20,221	26,082	394	Apr	174,456	658,919	68,142	88,969
Aug	108,026	112,586	0	May	1,151,699	1,476,137	108,118	122,956
4th Qtr	139,651	155,062	394	4th Qtr	1,326,155	2,135,056	176,260	211,925
TOTAL	720,731	870,401	2,246	TOTAL	7,166,000	11,837,026	776,200	948,871
1980/81				1980/81				
Sept	174,580	251,525	17	June	620,387	1,007,100	208,364	217,350
Oct	62,982	91,027	0	July	475,033	897,820	99,739	117,566
Nov	54,852	119,771	7,143	Aug	198,458	613,721	138,041	150,113
				Sept	576,818	994,834	103,180	114,358
1st Qtr	292,414	462,323	7,160	1st Qtr	1,870,696	3,513,475	549,324	599,387
Dec	815	14,058	0	Oct	418,748	716,432	78,330	92,721
Jan	981	41,791	0	Nov	272,608	649,066	37,899	44,456
Feb	1,471	117,558	1,429	Dec	616,398	971,698	68,867	73,711
2nd Qtr	3,267	173,407	1,429	2nd Qtr	1,307,754	2,337,196	185,096	210,888
Mar	43,305	114,750	1,125	Jan	405,615	753,860	48,185	83,723
Apr	1,810	41,432	16	Feb	502,852	786,383	72,464	90,183
May	503	56,863	0	Mar	687,319	1,176,303	67,501	75,690
3rd Qtr	45,618	213,045	1,141	3rd Qtr	1,595,786	2,716,546	188,150	249,596
June	407,509	418,284	39					
July	48,187	60,912	0	Apr	388,038	662,947	100,117	105,706
Aug	51,275	57,174	16	May	702,898	975,666	109,205	128,927
4th Qtr	506,971	536,370	55	4th Qtr	1,090,936	1,638,613	209,322	234,633
TOTAL	848,270	1,385,145	9,785	TOTAL	5,865,172	10,205,830	1,131,892	1,294,504

Continued--

Table 12.—Corn, sorghum, barley, and oats imports, 1975/76 to date--continued

Year and month	CORN		SORGHUM	Year and month	BARLEY		OATS	
	Grain only	Total	Total		Grain only	Total	Grain only	Total
	Bushels				Bushels			
1981/82				1981/82				
Sept	47,232	50,064	0	June	610,314	807,773	100,775	117,252
Oct	54,527	85,484	0	July	338,217	528,962	65,137	86,099
Nov	8,426	71,390	0	Aug	160,069	369,781	53,075	60,145
				Sept	318,906	648,411	76,882	83,979
1st Qtr	110,185	206,938	0	1st Qtr	1,427,506	2,354,927	295,869	347,475
Dec	158,826	231,084	167	Oct	181,471	437,924	60,349	69,425
Jan	321	32,702	0	Nov	647,471	896,666	70,277	81,798
Feb	118	105,527	15	Dec	892,812	1,086,699	60,553	70,180
2nd Qtr	159,265	369,313	182	2nd Qtr	1,721,754	2,421,289	191,179	221,403
Mar	1,063	116,202	199	Jan	780,039	989,703	30,724	43,110
Apr	4,900	20,978	0	Feb	844,258	1,052,933	31,463	40,939
May	34,328	54,210	106	Mar	487,592	690,770	41,105	67,490
3rd Qtr	40,291	191,390	305	3rd Qtr	2,111,889	2,733,406	103,292	151,539
June	217,319	249,153	6,389					
July	29,526	45,153	0	Apr	983,354	1,276,341	336,288	344,204
Aug	89	6,720	9,873	May	631,815	824,440	557,422	572,517
4th Qtr	246,934	301,026	16,262	4th Qtr	1,615,169	2,100,781	893,710	916,721
TOTAL	556,675	1,068,667	16,749	TOTAL	6,876,318	9,610,403	1,484,050	1,637,138
				1982/83				
1982/83				June	1,706,202	1,890,855	173,860	192,633
Sept	57,841	83,885	5,440	July	1,602,675	1,808,382	311,531	322,304
Oct	36,755	63,827	38,834	Aug	578,914	869,862	157,066	186,560
Nov	153,521	184,648	3,969	Sept	271,038	520,052	42,950	67,955
1st Qtr	248,117	332,360	48,243	1st Qtr	4,158,829	5,089,151	685,407	769,452
Dec	52,888	81,987	2,673	Oct	118,788	375,818	41,249	48,694
Jan	5,346	25,718	0	Nov	901,290	1,166,105	69,839	82,915
Feb	383	20,320	0	Dec	210,376	359,493	80,919	101,512
2nd Qtr	58,617	128,025	2,673	2nd Qtr	1,230,454	1,901,416	192,007	233,121
Mar	52,592	116,099	24	Jan	411,890	602,902	327,193	343,005
Apr	4,472	34,644	0	Feb	573,023	702,910	346,452	361,453
May	29,196	49,197	0	Mar	695,950	855,026	688,400	846,946
3rd Qtr	86,260	199,940	24	3rd Qtr	1,680,863	2,160,838	1,362,045	1,551,404
June	72,972	79,436	29					
July	1,489	8,400	0	Apr	748,297	869,229	441,625	461,343
Aug	21,394	29,572	0	May	532,160	644,747	830,870	849,348
4th Qtr	95,855	117,408	29	4th Qtr	1,280,457	1,513,976	1,272,495	1,310,691
TOTAL	488,849	777,733	50,969	TOTAL	8,350,603	10,665,381	3,511,954	3,864,668
				1983/84				
1983/84				June	984,175	1,076,280	1,352,013	1,374,965
Sept	187,378	224,236	55	July	697,624	811,948	4,040,293	4,067,425
Oct	74,362	103,908	0	Aug	613,639	872,632	3,759,037	3,776,309
Dec	135,991	181,386	0	Sept	406,495	681,755	2,494,421	2,511,830
1st Qtr	397,731	509,530	55	1st Qtr	2,701,933	3,442,615	11,645,764	11,730,529
Dec	10,484	58,924	0	Oct	152,380	432,289	2,066,649	2,107,494
Jan	301,147	361,028	0	Nov	30,350	257,914	1,517,183	1,551,431
Feb	238	164,021	0	Dec	636,688	805,125	1,224,336	1,262,960
2nd Qtr	311,869	583,973	0	2nd Qtr	819,418	1,495,328	4,808,168	4,921,885
Mar	55,570	310,958	0	Jan	305,982	470,695	1,379,602	1,388,291
Apr	421,092	460,456	0	Feb	105,250	246,267	3,637,066	3,665,607
May	9,899	205,026	0	Mar	292,509	445,810	5,560,632	5,580,005
3rd. Qtr.	486,561	976,440	0	3rd Qtr	703,741	1,162,772	10,577,300	10,633,903
June	134,071	176,922	9					
July	368,517	372,316	141,963	Apr	418,999	581,084	1,940,376	1,958,505
Aug	8,062	15,913	0	May	401,076	404,011	943,825	961,346
4th Qtr	510,650	565,151	141,972	4th Qtr	820,075	985,095	2,884,201	2,919,851
TOTAL	1,706,811	2,635,094	142,027	TOTAL	5,045,167	7,085,810	29,915,433	30,206,168

Continued--

Table 12.—Corn, sorghum, barley, and oats imports, 1975/76 to date—continued

Year and month	CORN		SORGHUM	Year and month	BARLEY		OATS	
	Grain only	Total	Total		Grain only	Total	Grain only	Total
	Bushels				Bushels			
1984/85				1984/85				
Sept	116,290	127,399	0	June	920,819	1,054,291	305,312	322,345
Oct	260,438	317,134	0	July	722,362	883,625	1,469,282	1,490,031
Nov	345,944	440,702	0	Aug	1,023,658	1,165,980	217,495	234,276
				Sept	284,510	466,491	3,771,243	3,786,897
1st Qtr	722,672	885,235	0	1st Qtr	2,951,349	3,570,387	5,763,332	5,833,549
Dec	41,045	134,862	120,673	Oct	276,438	505,461	3,449,893	3,462,452
Jan	41,925	147,551	0	Nov	300,744	591,477	1,485,364	1,494,579
Feb	0	81,696	0	Dec	1,640,951	1,899,683	4,119,279	4,138,000
2nd Qtr	82,970	364,109	120,673	2nd Qtr	2,218,133	2,996,621	9,054,536	9,095,031
Mar	15,777	93,686	0	Jan	358,752	618,802	4,035,973	4,095,972
Apr	9,264	38,751	0	Feb	356,654	688,930	4,017,603	4,092,731
May	824,177	936,859	0	Mar	537,365	905,566	3,857,568	3,900,423
3rd Qtr	849,218	1,069,296	0	3rd Qtr	1,252,771	2,213,298	11,911,144	12,089,126
June	60,875	944,203	0					
July	1,428	39,177	0	Apr	939,773	1,166,350	5,170,327	5,257,192
Aug	15,836	135,868	0	May	60,460	160,312	1,728,469	1,751,151
4th Qtr	78,139	1,119,248	0	4th Qtr	1,000,233	1,326,662	6,898,796	7,008,343
TOTAL	1,732,999	3,437,888	120,673	TOTAL	7,422,486	10,106,968	33,627,808	34,026,049
				1985/86				
1985/86				June	340,425	588,237	1,728,933	1,757,614
Sept	8,086	33,974	0	July	251,910	478,428	1,889,404	1,931,401
Oct	314,654	350,199	0	Aug	61,653	345,756	825,818	834,833
Nov	540,018	600,046	1,429	Sept	109,312	347,927	1,288,425	1,304,864
1st Qtr	862,758	984,219	1,429	1st Qtr	763,300	1,760,348	5,732,580	5,828,712
Dec	121,966	258,092	0	Oct	872,324	1,087,159	1,256,991	1,264,610
Jan	374,481	483,279	0	Nov	339,674	591,311	1,672,252	1,678,864
Feb	456,976	540,101	0	Dec	592,242	689,112	3,210,457	3,232,191
2nd Qtr	953,423	1,281,472	0	2nd Qtr	1,804,240	2,367,582	6,139,700	6,175,665
Mar	369,991	416,011	0	Jan	528,661	935,239	3,264,356	3,284,460
Apr	623,207	662,745	630	Feb	1,413,559	1,589,598	2,394,906	2,418,051
May	1,212,047	1,240,983	0	Mar	261,745	443,882	2,336,953	2,366,047
3rd Qtr	2,205,245	2,319,739	630	3rd Qtr	2,203,965	2,968,719	7,996,215	8,068,558
June	1,765,143	1,774,942	0	Apr	385,235	616,253	3,574,782	3,591,060
July	2,994,897	3,082,335	797	May	1,088,551	1,276,845	3,795,409	3,822,076
Aug	1,116,694	1,139,076	0					
				4th Qtr	1,473,786	1,893,098	7,370,191	7,413,136
4th Qtr	5,876,734	5,996,353	797					
				TOTAL	6,245,291	8,989,747	27,238,686	27,486,071
TOTAL	9,898,160	10,581,783	2,856					
				1986/87				
1986/87				June	1,296,495	1,501,548	5,325,571	5,345,316
Sept	311,213	332,783	6,329	July	15,140	223,046	1,841,943	1,868,602
				Aug	19,469	210,558	1,537,423	1,559,704
				Sept	75,927	307,474	846,095	879,869
				1st Qtr	1,407,031	2,242,626	9,550,832	9,653,491

Corn includes grain only (yellow dent corn, other), seed, and cornmeal. Sorghum is grain only. Barley includes grain only (barley for malting, other), pearl barley, milled and malting. Oats include grain (hulled or unhulled, unhull oats fit and unfit for human consumption, and oatmeal fit for human consumption.

Source: Bureau of the Census, U.S. Department of Commerce.

Table 13.--Grain protein feeds: Production and stocks by months, United States, 1970-86

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
						1,000 short tons							
						Corn gluten feed and meal							
Production													
1970	112.7	157.5	144.1	141.3	133.1	122.7	154.2	139.1	162.6	157.1	148.1	147.8	1,720.3
1971	153.4	165.0	130.5	126.1	131.7	141.5	162.7	151.1	165.0	158.9	155.8	155.9	1,797.6
1972	155.9	169.9	163.4	155.5	154.6	157.0	159.9	180.8	180.2	178.5	183.8	218.2	2,057.7
1973	175.5	202.7	173.3	172.4	174.2	153.7	202.2	178.4	187.2	171.3	168.8	177.7	2,137.4
1974	188.7	191.0	172.4	182.6	203.1	192.3	197.0	193.7	215.7	203.5	196.1	205.6	2,341.7
1975	213.1	227.9	203.1	185.9	208.6	196.1	200.3	224.3	214.6	220.0	209.4	226.5	2,529.8
1976	237.6	213.8	218.0	193.6	185.0	201.9	236.3	242.4	239.9	243.6	218.8	255.9	2,686.8
1977	247.8	251.6	217.8	224.6	215.3	226.7	259.2	247.0	270.0	274.2	276.1	279.3	2,989.6
1978	278.7	286.0	243.3	249.3	208.7	222.1	289.1	237.8	318.3	300.7	287.7	287.6	3,209.3
1979	295.7	331.5	317.7	308.7	297.1	294.8	289.3	281.4	272.3	280.6	292.1	262.8	3,524.0
1980	271.7	307.0	281.0	286.7	278.7	262.6	324.0	295.9	366.4	374.2	356.2	324.4	3,728.8
1981	342.9	319.0	319.2	310.6	312.5	299.5	372.1	349.3	351.0	362.7	352.3	388.2	4,079.3
1982	384.1	351.0	401.6	336.7	325.3	358.8	386.6	397.4	387.0	434.9	397.9	455.9	4,617.2
1983	442.0	436.9	407.3	399.1	382.9	326.2	516.7	548.8	507.1	471.2	517.8	495.7	5,451.7
1984	450.0	445.1	454.0	461.6	284.6	410.2	507.3	492.9	553.6	538.3	558.1	554.5	5,710.2
1985	527.4	436.1	366.9	381.0	417.7	411.2	431.7	447.2	459.9	495.4	515.9	498.2	5,388.6
1986	480.4												
						Brewers' dried grains							
Production													
1970	29.0	27.8	25.1	27.2	26.8	24.9	32.1	32.1	32.4	36.0	34.9	32.0	360.3
1971	30.1	28.3	24.9	27.2	26.4	28.2	31.9	32.7	34.8	35.8	34.3	33.2	367.8
1972	31.1	28.0	24.2	23.0	26.3	26.0	30.4	30.9	34.0	31.8	35.6	36.5	357.8
1973	30.2	31.8	25.3	24.3	27.0	23.9	27.7	29.1	33.2	31.8	35.4	32.4	352.1
1974	27.0	26.7	24.1	23.1	26.1	23.1	25.0	32.0	32.0	35.9	36.4	31.7	343.1
1975	30.4	31.5	22.6	26.3	25.0	25.2	16.7	23.6	26.1	30.4	31.2	33.4	322.4
1976	28.3	26.0	18.8	19.6	21.4	19.3	28.3	29.5	28.3	30.9	29.6	23.7	303.7
1977	20.4	21.3	18.3	19.9	20.2	18.5	24.2	25.8	25.7	27.8	27.6	29.4	279.1
1978	23.7	19.9	17.1	20.7	21.4	24.9	30.3	28.2	29.3	31.7	27.5	30.4	305.1
1979	26.9	28.2	22.0	22.1	25.6	25.0	28.7	29.5	31.1	28.9	34.2	31.1	333.3
1980	32.8	24.3	21.2	24.6	24.6	23.7	28.9	27.9	30.6	30.3	29.8	29.8	328.5
1981	23.4	23.0	18.4	19.6	21.1	21.6	23.3	21.0	21.9	25.1	25.0	23.4	266.8
1982	19.8	18.2	14.8	15.8	19.0	16.1	16.6	21.6	20.4	20.0	20.5	17.6	220.4
1983	13.5	10.3	9.8	9.8	11.1	10.2	13.9	13.3	12.3	15.4	16.1	17.1	152.8
1984	10.1	11.9	9.5	12.0	13.6	12.1	13.9	14.5	14.8	14.6	14.0	13.2	154.2
1985	12.1	11.7	10.1	11.0	11.4	11.9	11.7	12.7	13.7	14.3	13.8	13.4	147.8
1986	12.7												
Stocks, end of month													
1970	5.4	5.1	5.3	6.9	5.3	5.3	5.1	4.7	4.1	4.2	5.2	6.8	
1971	6.4	5.6	4.7	3.9	3.8	3.8	3.6	3.5	4.1	4.0	5.8	6.4	
1972	7.0	5.6	3.8	3.0	3.1	2.4	2.6	2.7	3.1	2.4	2.5	3.0	
1973	3.0	2.0	2.5	2.0	2.3	2.4	2.6	2.0	2.4	3.0	3.8	3.5	
1974	3.4	2.9	2.9	2.7	2.4	2.3	2.0	2.7	2.0	2.2	2.0	2.2	
1975	2.7	2.5	2.5	2.6	1.5	1.5	1.3	1.2	1.5	2.5	2.2	2.3	
1976	2.4	2.2	2.2	1.9	1.4	1.4	0.8	1.4	1.3	3.1	3.1	3.3	
1977	1.9	1.4	1.3	1.6	1.0	1.7	1.4	1.9	1.8	1.1	2.0	2.9	
1978	1.7	1.8	1.3	0.9	1.0	1.0	1.4	1.0	1.1	1.4	1.0	1.9	
1979	0.9	1.0	1.4	1.0	0.6	0.8	1.0	1.2	1.7	2.0	2.1	1.9	
1980	1.8	1.7	0.9	1.3	0.8	1.1	1.2	1.4	2.0	2.0	1.9	1.3	
1981	1.0	1.2	1.0	1.3	0.5	1.1	1.0	1.4	1.2	1.5	1.3	1.1	
1982	1.5	0.8	1.4	0.9	0.8	1.4	0.7	0.6	0.6	0.9	0.6	0.7	
1983	0.7	0.4	0.3	0.2	0.4	0.4	0.5	0.8	0.7	0.7	0.9	1.0	
1984	0.8	1.0	0.9	0.7	0.8	0.6	0.5	0.8	1.1	0.9	1.1	0.9	
1985	0.9	1.1	0.7	0.6	0.7	0.5	0.6	0.6	0.7	0.7	0.8	0.7	
1986	1.0												

Continued--

Table 13.--Grain protein feeds: Production and stocks by months, United States, 1970-86--continued

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
						1,000 short tons							
						Distillers' dried grains							
Production													
1970	31.8	38.0	35.8	33.5	33.7	35.6	36.3	28.7	28.6	27.8	26.6	26.0	382.4
1971	31.5	34.6	33.7	35.2	37.8	36.4	38.6	36.9	37.6	35.8	27.9	22.0	408.0
1972	27.4	31.9	33.2	33.5	35.9	36.9	41.6	40.5	41.9	40.9	31.2	31.7	426.6
1973	31.7	33.8	36.9	37.3	50.5	37.8	41.7	42.1	42.4	37.2	33.9	31.7	457.0
1974	30.7	33.6	29.4	28.1	28.0	22.2	28.9	30.0	32.2	28.6	24.0	25.8	341.5
1975	29.8	38.0	32.6	32.5	32.2	29.1	35.5	37.2	32.5	38.7	28.2	28.6	394.9
1976	32.6	30.4	31.5	26.9	30.0	29.0	36.5	33.4	30.0	29.6	29.7	32.4	372.0
1977	37.6	35.6	29.9	33.5	33.5	30.1	28.4	32.4	37.4	38.6	33.3	34.0	404.3
1978	33.3	36.7	41.3	40.5	36.4	39.2	45.1	47.4	49.3	46.0	39.5	40.2	495.0
1979	35.1	35.0	36.4	40.3	38.4	40.6	47.7	44.9	49.2	41.9	36.3	33.5	493.1
1980	36.5	42.5	42.7	43.5	43.8	40.7	50.8	48.0	39.9	34.1	33.3	39.0	494.8
1981	41.9	41.8	39.1	43.4	35.1	35.7	40.6	34.3	40.7	47.7	41.3	45.1	486.7
1982	50.9	61.9	62.2	66.3	62.9	55.3	65.9	61.6	69.3	69.8	62.1	62.6	750.8
1983	50.8	61.6	29.9	44.3	53.9	54.2	57.6	56.4	56.9	55.8	51.6	50.8	623.8
1984	65.7	90.3	83.0	86.7	85.5	81.5	97.5	88.5	94.1	76.5	77.5	76.3	1,003.1
1985	83.1	110.3	101.7	101.2	103.6	95.7	110.5	107.3	107.7	108.7	107.4	107.3	1,358.5
1986	112.0												
Stocks, end of month													
1970	1.6	1.9	2.2	2.2	1.7	1.6	2.4	1.5	1.2	1.6	.9	1.1	
1971	2.0	1.7	3.3	4.1	2.3	2.2	2.5	2.0	2.7	2.9	1.9	1.8	
1972	1.0	1.2	1.1	1.3	1.6	1.8	1.9	2.1	4.2	2.7	3.8	2.8	
1973	1.7	3.4	3.2	2.9	3.4	2.0	3.0	4.9	3.6	2.9	4.4	1.7	
1974	1.3	3.0	1.0	1.7	1.4	1.5	2.3	2.8	4.0	5.3	5.4	4.7	
1975	4.8	4.1	4.1	4.5	1.9	2.1	2.4	3.9	7.0	4.3	4.9	2.5	
1976	2.6	2.2	4.5	3.4	2.2	1.4	2.0	2.6	2.9	2.8	2.2	3.8	
1977	4.0	4.7	3.8	1.7	1.7	2.9	4.3	3.6	5.0	4.3	2.0	2.0	
1978	1.4	1.8	2.0	2.2	2.8	2.0	2.3	3.4	4.4	4.0	3.4	2.1	
1979	3.6	2.9	4.9	2.7	2.1	3.8	3.1	5.6	4.5	4.3	2.7	2.0	
1980	4.1	2.7	3.2	4.1	2.3	4.4	4.3	5.2	3.2	2.6	3.9	3.0	
1981	3.2	3.8	4.1	3.9	2.4	2.9	3.2	4.2	4.2	3.4	5.5	5.0	
1982	4.6	5.5	4.1	4.2	4.5	5.6	4.6	7.4	7.3	6.6	6.9	6.6	
1983	4.4	4.8	6.3	6.0	4.4	4.2	6.4	8.3	7.8	8.1	11.6	9.2	
1984	5.6	10.9	10.3	10.5	12.0	9.1	8.1	10.2	9.4	10.8	10.9	10.4	
1985	13.2	14.1	12.4	12.7	9.0	7.3	8.9	8.7	8.1	6.1	9.2	6.0	
1986	8.1												

Source: Corn Refiners Association, Inc. and Livestock and Grain Market News, AMS, USDA.

Table 14.--Feed grains and grain products used in the production of alcohol, distilled spirits, and beer, by months, 1970 to date 1/

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
						1,000 bushels							
						Corn and corn products							
Distilled spirits and alcohol													
1970	2,141	2,422	2,182	2,135	2,587	2,444	2,239	1,863	1,729	1,811	1,359	1,253	24,165
1971	2,006	2,331	2,109	2,057	2,456	2,376	2,548	2,363	2,478	2,287	1,337	992	25,340
1972	1,514	1,984	2,034	2,050	2,393	2,451	2,927	3,056	3,116	2,891	1,902	2,209	28,527
1973	2,485	2,881	3,024	2,867	3,415	3,143	3,405	3,189	3,006	2,422	2,310	1,578	33,725
1974	1,855	1,962	1,576	1,163	1,179	1,212	1,271	1,049	1,536	1,355	693	817	15,668
1975	1,621	2,161	1,962	1,688	1,554	1,316	1,985	2,333	1,974	1,957	1,292	1,250	21,093
1976	1,511	2,072	1,632	1,274	1,464	1,607	2,022	2,004	1,959	1,756	1,415	1,613	20,329
1977	1,884	1,705	1,444	1,459	1,451	1,495	1,628	1,912	1,995	1,746	750	1,624	19,093
1978	1,682	1,962	2,121	2,120	1,849	1,928	2,168	2,274	2,399	2,217	907	1,539	23,166
1979	1,920	2,377	2,901	1,696	2,149	2,174	2,825	2,798	2,758	2,153	910	1,[illegible]	2[illegible]
1980	1,737	2,110	1,836	1,903	2,441	2,297	2,949	2,775	2,234	1,801	1,593	2,055	25,731
1981	2,240	2,621	2,066	2,550	2,433	2,869	4,024	3,630	3,369	3,261	4,075	3,528	36,666
1982	4,829	6,291	6,007	6,443	6,188	5,654	6,029	4,584	5,565	5,955	5,135	4,985	67,665
1983	3,898	3,892	3,599	3,446	3,690	3,800	4,261	4,238	3,902	3,091	2,571	3,035	43,423
1984	3,532	5,395	5,299	5,150	5,294	5,262	6,033	5,403	4,568	5,950	6,385	5,640	63,911
1985	5,691	5,997	2,927	2,071	2,242	2,162	2,788	3,114	4,679	4,570	3,815	3,984	44,040
Beer													
1970	3,712	3,453	3,098	3,311	3,142	3,132	4,073	3,982	4,085	4,681	4,448	4,082	45,199
1971	3,763	3,325	3,276	3,298	3,171	3,408	4,083	4,138	4,385	4,650	4,126	4,069	45,692
1972	3,533	3,386	2,932	2,862	3,352	3,530	4,195	4,088	4,269	4,121	4,448	4,424	45,140
1973	3,632	3,571	3,122	3,009	3,549	3,155	3,826	3,850	4,604	4,817	4,963	4,652	46,750
1974	4,039	3,705	2,881	3,031	3,822	3,478	3,842	4,767	4,636	5,183	5,164	4,434	48,982
1975	4,069	3,598	3,258	3,651	3,435	3,259	4,234	4,503	5,369	5,584	4,875	4,728	50,563
1976	4,118	4,006	3,422	3,381	3,715	3,693	5,526	5,375	5,402	5,275	4,890	4,805	53,608
1977	3,900	3,679	3,644	3,793	3,960	3,904	4,555	4,708	4,788	5,017	4,655	4,892	51,495
1978	3,989	3,907	3,511	3,478	3,529	3,166	4,232	4,149	4,334	4,115	4,366	4,205	46,981
1979	3,547	3,546	3,191	2,991	3,463	3,786	4,049	4,011	4,376	4,335	4,627	4,353	46,275
1980	3,985	3,600	3,359	3,772	3,070	3,576	3,965	4,262	4,530	4,540	4,693	4,117	47,469
1981	3,586	3,547	2,959	3,102	3,389	3,447	4,015	3,998	4,178	3,677	3,829	3,878	43,605
1982	3,461	3,329	2,910	2,960	3,157	3,128	3,809	3,633	3,884	4,038	4,255	3,787	42,351
1983	3,421	3,166	2,872	2,362	3,180	3,408	4,049	4,309	4,235	3,963	3,994	3,569	42,528
1984	2,829	3,327	2,675	2,397	2,889	2,985	3,314	3,923	4,240	4,078	3,595	3,410	39,660
1985	3,220	3,259	2,649	2,498	3,191	3,157	3,469	3,929	4,120	3,838	3,769	3,110	40,209
						Grain sorghum							
Distilled spirits and alcohol													
1970	274	427	375	353	268	283	277	306	319	252	260	288	3,682
1971	308	437	391	365	396	464	487	459	483	356	294	311	4,751
1972	307	306	299	232	251	140	98	60	218	67	88	183	2,249
1973	84	136	145	207	108	157	178	296	308	295	211	202	2,327
1974	319	290	230	294	295	239	249	201	263	349	243	252	3,224
1975	234	255	195	248	209	147	255	249	397	235	208	223	2,855
1976	252	277	224	201	212	214	200	212	246	237	245	225	2,745
1977	237	294	215	250	289	354	306	294	307	300	386	316	3,548
1978	308	363	369	368	366	320	375	353	347	296	331	349	4,145
1979	349	442	434	418	460	392	368	271	399	320	406	353	4,612
1980	331	379	415	599	199	275	379	340	380	381	357	370	4,205
1981	409	392	410	456	420	406	437	390	415	386	415	371	4,907
1982	269	231	378	389	356	355	241	264	299	347	322	253	3,704
1983	334	409	364	334	279	263	195	246	304	326	306	323	3,683
1984	362	1,311	1,207	1,503	1,085	835	1,117	1,110	943	516	474	523	10,986
1985	1,170	1,499	2,183	2,763	2,875	2,694	2,798	2,056	769	410	1,515		

Continued -

Table 14.--Feed grains and grain products used in the production of alcohol, distilled spirits, and beer, 1970 to date--continued

ar	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
						1,000 bushels							
						Barley and malt							
tilled spirits and alcohol													
0	401	339	259	408	478	415	406	499	460	528	426	358	4,977
1	262	211	228	359	407	432	389	471	456	425	384	406	4,430
2	328	154	195	259	354	376	342	439	422	427	392	406	4,094
3	350	154	242	256	292	311	321	460	358	359	331	329	3,763
4	243	112	132	207	215	168	154	165	171	174	162	213	2,116
5	165	97	97	191	300	335	251	228	212	242	305	270	2,693
6	263	147	173	209	231	193	212	227	246	332	293	287	2,813
7	256	198	259	262	265	202	184	202	210	226	250	268	2,782
8	228	127	240	269	289	321	340	256	294	335	352	363	3,414
9	302	156	221	264	291	273	288	266	255	333	329	352	3,330
0	222	118	180	195	241	164	230	320	297	358	345	321	2,991
1	248	162	189	247	315	297	263	287	302	358	369	283	3,320
2	235	199	185	455	309	274	225	252	292	315	288	248	3,277
3	180	94	132	158	167	182	160	210	263	289	252	213	2,300
4	105	56	110	162	216	240	167	192	194	180	156	182	1,960
5	152	119	141	149	173	370	122	163	169	185	183	148	2,074
6	127	95	77										
r													
0	10,907	9,996	9,109	8,850	8,308	7,503	7,891	7,710	7,591	10,405	9,890	9,967	108,127
1	10,981	10,949	9,938	9,247	8,491	8,011	8,089	8,112	8,497	10,094	10,134	10,465	113,008
2	11,316	10,573	10,410	9,181	8,993	7,905	7,746	8,978	8,719	10,518	10,317	10,936	115,592
3	10,383	10,966	11,304	9,683	9,924	8,710	8,564	9,784	8,806	10,381	10,529	11,937	120,971
4	12,133	12,488	12,194	10,311	9,878	8,563	8,384	9,922	8,655	9,623	11,154	11,050	124,355
5	12,060	12,266	11,173	10,265	9,516	8,798	9,318	9,677	9,536	8,430	10,322	11,418	122,779
6	11,988	12,297	12,271	10,969	10,304	8,567	8,504	9,244	8,693	11,930	12,164	12,240	129,171
7	12,671	11,982	11,103	9,595	9,448	9,244	8,902	9,950	9,832	12,355	12,170	12,656	129,908
8	13,059	13,051	14,020	11,494	12,094	9,849	10,142	10,792	10,523	13,284	12,614	13,326	144,248
9	13,106	13,293	13,119	11,450	12,014	10,689	10,483	11,100	12,061	12,978	13,242	14,035	147,570
0	14,191	14,721	14,148	12,860	12,106	10,548	10,616	10,622	11,595	12,857	13,678	14,451	152,393
1	14,194	14,356	13,466	11,806	11,319	9,852	10,056	12,234	11,232	12,814	13,193	13,259	147,781
2	13,628	12,430	12,590	11,537	11,251	10,061	9,981	11,113	10,640	12,862	12,724	13,350	142,167
3	13,427	13,027	13,068	10,778	10,779	9,670	9,031	10,526	10,925	13,008	12,289	13,632	140,160
4	13,333	13,751	12,456	10,396	10,900	9,348	9,617	11,136	10,357	12,253	13,101	13,390	140,038
5	12,880	12,597	11,647	10,367	11,040	9,362	9,578	11,568	11,081	11,925	12,803	12,706	137,554
6	13,323	13,404	11,904										

tly for beverage but also includes some industrial alcohol and may include some fuel alcohol.

rce: Department of the Treasury, Bureau of Alcohol, Tobacco and Firearms.

Table 15.--Hay: Production, harvested acreage, yield, prices received by farmers, and stocks

Year	Production			Harvested acreage	Yield per harvested acre	Season average price	Stocks	
	Alalfa hay	Other	Total all hay				January 1	May 1
	- - - - - - 1,000 tons - - - - - -			1,000 acres	Tons	Dol./ton	- 1,000 tons -	
1970	75,573	51,396	126,969	61,467	2.07	26.10	89,365	24,056
1971	77,285	51,847	129,132	61,355	2.10	28.10	87,651	22,200
1972	78,226	50,339	128,565	59,680	2.15	31.30	89,445	25,472
1973	78,805	55,412	134,217	61,828	2.17	41.60	88,790	24,311
1974	74,368	52,016	126,384	60,195	2.10	50.90	93,159	25,353
1975	78,183	54,214	132,397	61,353	2.16	52.10	84,687	18,505
1976	69,960	50,165	120,125	60,377	1.99	60.20	86,411	25,541
1977	80,814	51,397	132,211	60,988	2.17	53.70	77,651	19,540
1978	87,294	56,523	143,817	62,113	2.32	49.80	92,136	24,184
1979	88,110	59,197	147,307	61,279	2.40	59.40	99,024	30,108
1980	79,963	50,777	130,740	58,870	2.22	71.00	107,707	33,192
1981	83,696	58,824	142,520	59,599	2.39	67.30	91,689	25,374
1982	88,385	60,856	149,241	59,812	2.50	69.30	99,160	24,981
1983	82,212	58,552	140,764	59,717	2.36	75.80	103,996	28,118
1984	90,105	60,543	150,648	61,445	2.45	72.70	89,280	20,148
1985	85,291	63,668	148,959	60,553	2.46	68.50	100,589	26,853
1986	94,601	63,408	158,009	60,902	2.59		96,818	26,775

Source: Agricultural Statistics Board, USDA.

Table 16.--Hay: Average prices received by farmers, United States, by months, 1970-86 1/

Year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average 2/
	Dollars per ton												
1970	23.50	22.40	22.10	22.50	23.30	23.90	24.40	25.00	25.40	25.80	26.00	26.10	26.10
1971	25.60	24.60	24.10	24.30	24.50	24.90	25.30	26.10	29.20	29.70	29.00	28.00	28.10
1972	31.10	30.90	28.50	29.30	29.80	30.30	31.00	33.00	34.60	35.40	35.40	33.90	31.30
1973	37.50	35.20	36.30	39.00	43.10	46.20	46.80	46.00	47.10	47.10	45.40	44.40	41.60
1974	54.00	47.70	48.20	51.10	51.90	51.50	50.30	50.70	50.10	49.30	49.70	52.40	50.90
1975	56.30	53.60	51.20	51.00	50.80	50.30	50.20	51.60	52.70	54.30	54.10	54.10	52.10
1976	64.10	59.60	59.00	58.70	60.80	60.10	59.00	59.00	60.90	62.70	63.90	63.20	60.20
1977	68.10	61.30	56.80	52.50	50.00	48.20	48.40	49.50	50.50	51.80	51.40	51.40	53.70
1978	55.30	51.20	49.20	49.00	47.80	47.10	46.40	47.30	48.90	50.70	50.20	49.90	49.80
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.40
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.20	71.00
1981	75.30	66.90	64.00	63.90	62.70	64.80	65.40	65.70	67.90	69.90	69.50	73.30	67.30
1982	77.50	69.60	66.10	65.00	66.80	67.10	68.70	68.60	70.30	73.20	69.90	74.00	69.30
1983	78.10	72.70	71.20	71.20	74.70	76.80	75.10	76.70	76.60	78.70	79.40	79.80	75.80
1984	82.50	76.10	72.40	70.40	70.70	73.10	71.40	73.40	73.00	73.10	72.20	72.50	72.70
1985	77.00	72.10	67.90	66.70	66.90	66.00	66.00	67.20	67.80	67.30	68.00	69.20	68.50
1986	70.90	62.40	58.70	58.30	58.40	57.40							

1/ Prices reported for mid-month. 2/ U.S. season average prices weighted by marketings.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

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